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ABSTRACT

Educational accountability is treated as a philosophy and as a means of introducing system into an educational enterprise. The philosophy of accountability is discussed as to the demand for accountability, the possibility of using accountability as a political tool, the promise made by accountability and whether the promise can be kept, difficult issues, who is accountable to whom, and resistances to accountability. System approaches to accountability are viewed from the standpoint of first, establishing goals and objectives, and second, developing systems for evaluations, feedback, and corrective action. Specific program approaches to accountability described are external performance contracting, internal performance contracting, the voucher system, external audit or EPA, systems analysis, and PPBS. The evaluation portion of educational accountability is presented as to what evaluative research is, who should do the evaluation, types of evaluation studies, evaluation procedures, research design and measurement, and technique used to analyze evaluation data. Five case studies are provided as illustrations of attempts to implement accountability systems. The programs described are the Portland Public Schools Performance Contracting, Portland, Oregon; Contract Leasing, Grand Rapids, Michigan; PSRMAC Program Audit, State of Washington; A System Approach to Accountability, East Syracuse-Minoa Central Schools, New York; and The Hillsborough Public School PPBS Program, Hillsborough, California. Numerous references related to the various facets of accountability are provided. (DB)

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Putting
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Educational Accountability and Evaluation

PREP Report No. 35

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PREP

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Errata

The diagram on page 9 of this publication is incomplete. This is how the classical system diagram should look.

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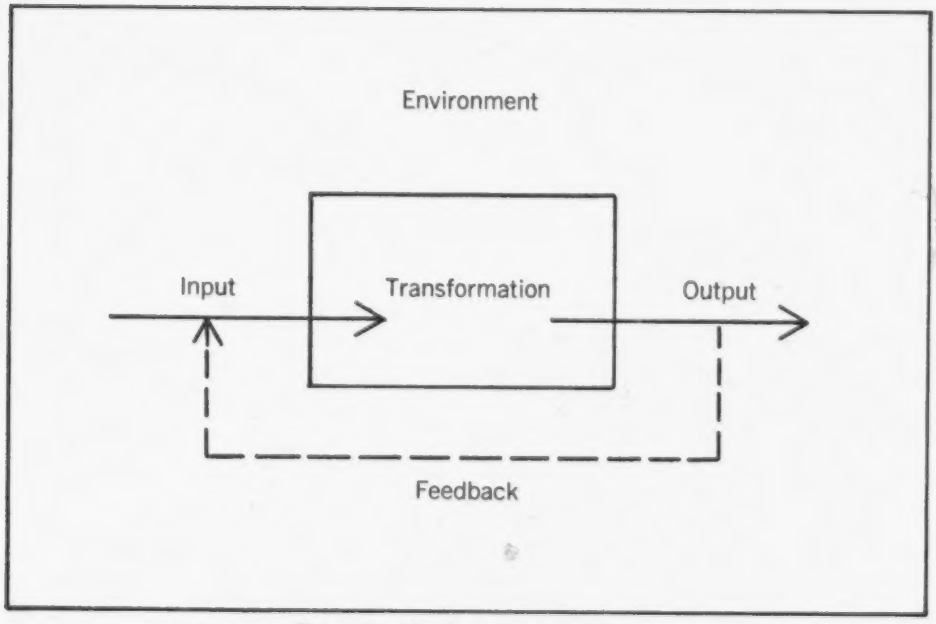

Figure 1. Classical system diagram

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Educational Accountability and Evaluation

PREP Report No. 35

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ACCOUNTABILITY: THE PHILOSOPHY

Accountability is the subject of many misunderstandings. It is often misunderstood by teachers who view it as a whip or a "bum rap"; by school administrators who believe it will solve their problems; by parents who hope it will enable their children to bring home straight "A's"; by private companies who feel it creates a specific, lucrative educational market for their services; and by government agencies who view it as a method to save funds. The term accountability is a convenient catchall for the various charges the perennial critics of schools have leveled at educators. The word has also been used by its advocates to characterize almost every innovative educational technique or program. Definitions abound, but the authors have chosen to treat accountability as a philosophy and as a means of introducing system into an educational enterprise. The *philosophy* is one of responsibility; the schools are accountable for their product. *System* refers to closing the feedback loop by honestly evaluating learning and making corrective changes on the basis of evaluation findings.

The Demand for Accountability

A number of social and political developments have converged to produce widespread demands for accountability. Among these are the growing public movement for evaluation and cost/benefit analysis of resources expended by the Federal Government, the increase of reports in the media of critical assessments of educational programs and the war on poverty, which have focused public attention on the large numbers of children, especially the culturally disadvantaged minorities, who lack the basic skills of reading and arithmetic. While the failures of the schools are not new, they can no longer be hidden or ignored. Underlying the criticism there *is* something new: a new optimism that all children can succeed in school if the conditions are right. For the first time schools are being asked to act as accountable agents who service *all* of their clientele.

The older "competitive free market" model —in which the student, sink or swin, was solely responsible for his failure—is yielding to a new philosophy in which *every* student is expected to succeed, and the school feels a responsibility to make that happen. Still, these are not the only forces placing new demands on the schools. Americans are in a mood for self-appraisal; many of the traditions, institutions, and basic goals of society are being questioned, and not just by "irresponsible" youth. As one of the institutions traditionally responsible for transmitting the culture, the schools have become a central battleground in the struggle of ideas and values. The discrepancy between what schools are professing to teach and what students are actually learning is increasingly obvious. Growing parental concern, the general unrest in society, the search for relevance, the failure of the schools to be parental surrogates, and the reevaluation of traditional goals have all been instrumental in encouraging the movement for accountability.

New educational technology has also had its impact. The trend to define goals and objectives in performance terms can be traced to behaviorist psychologists such as Sidney Pressey, Ralph Tyler, and B. F. Skinner whose ideas about operant conditioning formed the basis of programed instruction. Programed instruction is designed to ensure that 85-95 percent of the students master each frame in a program; it was a short step from this fact to the formation of the idea of guaranteed student learning defined in terms of behavioral outcomes (objectives). The idea was further expanded by Benjamin Bloom and others to produce the mastery learning approach which assumes that the great majority of students can master a curriculum if given sufficient time and exposed to a variety of teaching techniques. The increasing involvement of industry in education introduced the concept of quality control, a philosophy that claims every child can succeed if conditions are closely identified and their high quality ensured by monitoring. For example, the concept of zero-reject production from industry has led to the idea of a zero-reject educational program which guarantees success in some terms for every child. In the process, emphasis has been

shifted from educational input (teacher characteristics, number of books, numbers and type of courses, amount of money spent, and space allocated) to output (measurable student learning).

These philosophies have often been combined with techniques of systems analysis, which were first applied to government enterprises in the Department of Defense under Robert McNamara, and subsequently to education in the form of management by objectives and PPBS (Program Planning and Budgeting Systems). The demands for accountability and for stringent evaluation as a precondition for receiving public and private grant monies are the logical requirements of a government that seeks to determine how efficiently public money is being spent.

Public taxes have been rising steadily and taxpayers now feel they ought to determine priorities among the social services purchased by their tax dollars. Conservative taxpayers are reluctant to give the schools more money unless it can be demonstrated that they are getting measurable results. The minorities and their champions charge that the schools are not educating their children. Julius Hoffman, director of the Washington Institution of Quality Education, has said, "Education is the only industry in which the consumer, the child, is held responsible for the quality of the product."

A Possible Political Tool

There are angry political and ideological overtones in some of the talk about accountability, and one of the great dangers is that, through misapplication of the accountability processes, the schools can become political tools in the hands of dissenting groups and the needs of students become subordinate to political issues. For instance, if various pressure groups demanded that the criterion of student performance in a school should be the learning of their "facts" and the points of view which they advocate, and if they succeed in compelling the school to carry out these points of view in its programs, then the distinction between reform and abuse has been eliminated.

A related caution concerns the imposition of standards by the funding agencies who collect public money and redistribute it to local school districts. There is the continual danger that some of these agencies will limit creativity and stereotype program approaches by setting down narrow and rigid guidelines. Not only does this reduce local initiative to discover solutions that meet local conditions, but it can also produce in educators a "leveling down" to minimal achievement that just meets the standards set by the funding agency.

But the most serious danger to the accountability movement is the varied and contradictory interpretations of the idea of accountability. In the hands of reformers and popularizers the concept loses all meaning. Accountability becomes a buzz word which stands for almost any educational practice they might wish to promote or attack. Extravagant claims and baseless accusations are eroding the credibility of accountability. Accountability is not a new miracle diet; it is not a new gimmick that will cure all ills of the schools in a week or a month. Accountability is also not a purchasable item. One cannot hire a consultant or company to come into a situation and *do* accountability, thereby resolving all the problems. Accountability will not solve all or even most of the problems encountered in education today. Accountability will not even produce more learning for less cost. In the broadest sense of the word, accountability transcends any particular program or technique; it is a philosophy and a way of introducing systematic organization and responsibility into educational enterprises. It most certainly can help clarify and define educational problems and perhaps it can increase the motivation to solve them, but the solutions themselves remain as elusive and complex as ever. They remain *educational* solutions, the application of improved methodology and more relevant learning experiences for children. In the face of the misinformation about accountability, it becomes critical for educators to understand that their basic problems will still remain even after accountability processes have been instituted.

Accountability Is Keeping a Promise

Since the early 1950s, it has been recognized that nearly all students can succeed in learning if relevant content and a variety of teaching techniques are available, and if the

students are given enough time to learn. It is no longer acceptable for students to graduate from high school with elementary reading skills. In every area of the curriculum minimum standards are being significantly raised and at the same time serious expectations are entertained that all students are to meet these standards, including the considerable proportion who were not making appreciable progress in the past. New instructional models are being developed in which students are no longer compared with each other; they are graded in terms of their own progress toward defined behavioral objectives on criterion-referenced tests.

A new promise is being made to students and parents and the accountability movement seeks to hold educators responsible for that promise.

Can the Promise of Accountability Be Kept?

About seven million American students are in critical need of special instruction in reading. In the 1969-1970 school year there were approximately 800,000 dropouts from high school, an increase of 100,000 from the previous year. Youth unemployment is directly related to dropout rates and presents still another dismal problem. Jobs calling for high school graduates have increased 30 percent, while jobs for nongraduates have decreased 25 percent. These problems are manifestations of serious disparities and conflicts within our society, and they should not be laid at the door of any one of our institutions alone. And so, before one can determine reasonable expectations for the accountability movement, he must assess the degree to which better education can contribute to the solution of these problems. Certainly, a clarification of goals and responsibilities can introduce new vigor and health into our schools. And, perhaps, reform in education will spread and revitalize other segments of our society. These are imponderables; so one must look closely at the specific experiments in accountability to make an assessment of its effectiveness in bringing about educational change.

The short-term prospects of accountability programs to achieve the promises made for them by advocates are not promising. Although the Office of Economic Opportunity has been interested in starting a voucher plan,[1] none of the school districts considered as sites have been willing to implement the plan. Resistance to other approaches to accountability is also high. There has been much criticism by teachers and administrators of the California PPBS system. The recent evaluation studies made by Rand Corporation (1971)[2] of the performance contracts funded by the Office of Economic Opportunity found that performance contract attempts thus far have resulted in surprisingly small increases in students' reading and math skills. It was noted that performance contracting is most effective as a vehicle for implementing new and complicated teaching methods, since school personnel can benefit from inservice training and observation of the contracting company using the new techniques. Many educators now believe that accountability approaches in public schools will not be effective until teacher training institutions become accountable for teaching modern instructional methods and for introducing teachers to modern materials. Administrators must also be persuaded to support accountability, both their own as well as teachers'.

Although student learning has not been significantly improved, many accountability programs report that side effects have been positive. Students respond well to the added interest in their learning and welfare, and dropout rates and absences have decreased in some schools participating in performance contract plans. Teachers working in these experimental programs seek more effective teaching techniques and show greater concern for slow learners and culturally deprived students.

In the long run, the accountability movement will be considered successful if it helps complete the current revolution in educational philosophy which says that every child can learn and that all who influence that learning accept responsibility to reach each individual student, to evaluate programs objectively, and to make the necessary changes indicated by evaluation results. The long-term success of accountability will also be measured by the

[1] See pp. 18-19 for a discussion of voucher plans.

[2] PREP report 28 on "Educational Performance Contracting" was based upon one of the Rand studies.

degree to which it helps to spell out educational alternatives and the relationship of resources to benefits, and to fix responsibility and provide means by which the best alternatives can be adopted. Accountability is not a panacea. Educators must not have unrealistic expectations, but they can move forward the promise of accountability.

Some Difficult Issues

Teachers are usually held "accountable" for keeping their classrooms quiet (although it has been demonstrated that this can be an impediment to learning), which illustrates that accountability deals with values. Goal decisions must define what students should learn, but goal development falls heir to all the same problems in which educational philosophers have eternally entangled themselves, because goals involve values. The only areas of fairly universal agreement on goals are those related to coping with life now, understanding laws, reading labels and newspapers, and computing tax forms, etc. Heated conflict between educational ideologies appears whenever goals touch upon the higher questions of what heaven we will be transported to after death. For example, there is an unresolvable dispute between the humanists, who believe that education must develop the inner individual, foster creativity, and teach the art of questioning, and those who seek education's role as teaching the three R's, as technical and prevocational skill training, and as indoctrination into the values and ethics of the culture. Such conflicts will not be resolved by accountability; they can only be clarified. Moreover, conflicts in priorities will arise in proponents of the same philosophical viewpoint. Educators may believe that both the fine arts and the three R's are necessary elements of education, but one group may emphasize the former and another, the latter. A long and difficult process of goal setting can be expected.

One of the chief dangers of goal setting is reductionism—emphasis on that which can be easily measured to the exclusion of the more abstract and complex (and often more important) objectives. Compromises are often made on short-range objectives, with the result that accountability stresses those objectives on which people can agree, like decoding skills in reading or basic arithmetic skills. When this occurs there is a tendency to spend more and more instructional time on the few basic skill areas in which objectives have been set. Humanities, fine arts, social sciences, and other subjects that are more value-laden and abstract in content are neglected. After all, the teacher knows that the objectives are not just for his students; his work will also be evaluated on whether his students have mastered those objectives which can be easily measured.

Sometimes a kind of "reverse reductionism" is the final outcome of the struggle to define goals for the more abstract and value-laden areas. To avoid conflict, goals are framed in the broadest and vaguest manner, eliminating all controversies and allowing each educator to interpret the goals as he sees fit. For example, a number of State education agencies have set up commissions to establish broad goals. Typical products of these efforts are: "self-understanding," "understanding others," "interest in school and learning," "preparation for a changing world," and so forth. These broad goals inhibit growth and movement by emphasizing that which is already established and digested by a culture. A society confronted by increasingly complex problems cannot rely on goals formulated decades ago.

The emphasis on measurable student growth will bring to focus still another basic conflict: accountability can either be used to individualize instruction, helping students learn more independently, or it can emphasize mastery, helping schools to do what they've always done, but with increased efficiency and fewer failures. Accountability forces educators to a crossroad; they can either reject the old factory for a more efficient factory (mastery learning), or reject the factory all together in favor of individualized learning.

Accountable To Whom?

Who is accountable to whom? The simplistic and idealistic answer is that everyone who has a role in the education of America's youth is accountable. Everyone who is demanding accountability is also in some sense account-

able, if only to participate in goal setting and be held responsible for his contribution. The serious question of who should be accountable to whom, though, is a technical one which can only be answered after a thorough analysis of the system in question. Accountability must be related to the way in which the education system operates and the various parts interrelate. There is no reason to hold a school administrator accountable for a particular kind of output if he does not have influence over that output. The system must be studied to determine who has impact on what process, or output, so that the appropriate persons or groups can be held accountable for their portion. But no specific part of the system (teachers, for example) should be singled out as individuals to be punished. All parts of the system have to work harmoniously together.

School boards must be accountable for their policies and for acting on the data provided by evaluators. Administrators must be accountable for the moral support and material resources they provide the classroom, for in-service teacher training, and for creativity in planning. Designers and developers of various kinds must be accountable for the curriculum, the school buildings, the equipment, and so forth. Teachers, teacher aides, and other personnel must be accountable for the processes of diagnosis, instruction, and evaluation that occur in the classroom, and for the specific behavioral objectives that they and the educational community set. Parents must also be accountable for the physical and psychological support they give the school and for the learning situations and favorable psychological climate they create in the home, for insuring that their children aren't tardy and absent, and for attending school meetings. Even students should be accountable so long as the tasks for which they are held accountable are reasonable, well-designed, and adapted to their individual needs.

Resistances

When accountability becomes a way to "pin a rap" on a scapegoat for all of education's problems, resistance naturally follows. In the long run it becomes a self-defeating political game. People will resist the changes required by accountability just as man always resists change because he fears the unknown and because change is difficult work. If the fear of being fired, demoted, or fined is added to the fear of change, accountability in education will never occur.

Already established institutions, like school boards and teachers' associations, feel threatened by accountability and have published statements against various accountability proposals and efforts. For example, teachers are generally against average student performance-based teacher evaluation, thorough evaluation of student progress (referred to as overtesting), and invasion of education by industry because they have not accepted the mastery learning concept and they presume that their jobs are in jeopardy. Board members tend to fear Federal control, and administrators fear publication of test results, claiming lack of sufficient resources to implement an accountability system. Some parents even fear accountability because they think their children will learn reading, writing, and arithmetic to the exclusion of modern science, good morals, and football. And, of course, students fear excessive testing. These groups must be reassured that accountability is diagnostic and analytical rather than judgmental. And the way to reassure them is to build into any procedure for accountability a statement or structure that would guarantee protection from retribution for the individual participants. The purpose is not to single out individuals but to improve education, and the ultimate responsibility for achieving goals must be divided among all groups involved in the educational system. Accountability is not a threat to professional freedom, but one of the bases upon which professional responsibility is built. All subelements of the system must share in the accountability effort, necessarily restricting certain individual choices but increasing the efficiency and effectiveness of the whole system. If those to be affected by the system have some voice in its establishment and have the ability to influence the direction it takes, then there is less conflict between accountability, personal freedom, and professional prerogatives.

Teacher performance must be evaluated on individual teacher and student improvement rather than on absolute or normative standards

if resistance is to be reduced and the teaching process perfected. It is not clear that it is necessary to use the "carrot and stick" to get professional people to do their job. Many teachers respond positively to informational kinds of reinforcement, such as the reward of knowing that students are progressing, that can be provided in an accountability system. Many educators fear that accountability will not foster maximum levels of achievement on the part of teachers and students. However if average standards are set for them, the setting of flexible behavioral objectives and the emphasis on self-competition and individual change scores should help to overcome the temptation to "just get by." But maximum levels of achievement must still come from an individual's internal motivation, though the teacher should be given full recognition and reinforcement for maximum effort and superior achievement.

Teacher resistances to accountability can be further decreased when teachers can acquire more political power, greater self-governance, and a larger role in the development of the goals and objectives of the educational system. External mandates and legislation do not work well; they foster a we-they dichotomy. Laws that require a foreign language, special curriculum selection, or sex education to be taught have become political issues rather than professional questions. Inservice and preservice seminars on accountability might also increase its acceptance by school staff and administrators. But most importantly, such tactics as firing, allocating tough teaching assignments, bad classrooms, problem students, study hall duty, public embarrassment, and informal ostracism should never be associated with accountability. Accountability must be seen as a means, not an end.

Another type of resistance results from the overselling of such approaches as performance contract, PPBS, and systems analysis. Often the advocates of such programs promise that they will solve all the problems facing a school district, and they gloss over the difficulties and complexities of implementation. On occasion the programs are poorly designed, hastily introduced, and finally rejected because they are not only incapable of delivering promised results, but have unforeseen, troublesome side effects. Eventually, this is a self-eliminating problem because those advocates, contractors, and approaches which are not well founded will lose support. The danger is that they will discredit the whole movement along with themselves. The only way to reduce this danger is to increase the clients' professional judgment and competence. Perhaps accountability will promote competence at every level by holding people responsible for what they say and what they produce.

In Conclusion

This survey of the philosophical bases and unresolved problems of the accountability movement has been necessarily brief and fragmentary. Its purpose is to provide a vantage point from which to view the movement in perspective. The broad picture which emerges is that of an evolutionary development (a *quiet* revolution for those of more radical taste) progressing toward increased responsibility to each child in the care of the schools. The movement is full of contradictions, the same conflicts of values and priorities which face our society and all its institutions, and which make life in a democracy so frustrating and interesting. Many pitfalls have been pointed out; others exist; and all of them have the potential of retarding or derailing the promise of accountability. But the movement is basically optimistic in spirit, affirming the capacity of all children to learn and the competence and commitment of educators to help them succeed. This spirit of optimism makes one hope it will prevail.

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ACCOUNTABILITY AS A SYSTEM

Input, transformation, output, and feedback are the four major functions of any system, be it a hummingbird looking for nectar flowers, a star holding its satellite planets in orbit, or a school district practicing accountability. As these functions operate over time, they enable the system to more closely approach its goals. Figure 1 is the classical system diagram; it illustrates the relationships between functions.

Figure 1. Classical system diagram

Implicit in the concept of systems is purpose; a system moves toward goals (represented by the output arrow) by transforming input (raw materials) into output. If the output produced by the system has all of the qualities that were desired and planned for, the system is achieving its goals. But often the goals describe an unattainable ideal state, resulting in a discrepancy between the real output and the goals. Such discrepancies are discovered through evaluation. Information about the discrepancy is fed back into the system through the feedback loop (dotted line), where it is used to make compensatory adjustments in the transformation process so that the new output can more closely approach the ideal state (goals).

A heating system composed of a heater and a thermostat provides a very simple and concrete example of these processes. The thermostat is set at 72°; the goal is maintenance of that temperature. The inputs (raw materials) to be processed by the system are air from the environment and energy in the form of fuel. The temperature of the air is evaluated by the thermostat which finds it too cold. This information is transmitted through the feedback loop (wiring, in this case) to the heater which makes an adjustment by turning itself on. A heating transformation takes place, and the output is changed as warmer air is poured into the room. The thermostat continues to evaluate the changing air temperature until it reaches the goal of 72°, at which point it transmits a new message through the feedback loop, causing the heater to adjust its transformation process again by shutting off the heat. Of course the heating system is not

an isolated entity; it operates within an environment of insulated walls, open or closed windows and doors, and the weather in its locale.

There is more to the analogy between the heating system and the schools than hot air! The inputs are (1) students (air) who come to the school (from the environment) with various cultures, skills, knowledge, and needs, and (2) educational facilitators (fuel) including faculties, administration, buildings, materials, etc. The transformation (heating) is learning, and the output (warmer air) is the increased knowledge and skills of the children. To this point the analogy holds, but now one discovers a dissimilarity. In traditional educational systems there is very little consistent evaluation. If the schools can be said to have a thermometer, it is a very bad one. Grading practices are inconsistent from term to term and subject to subject, within schools and between schools, and, at best, it is highly questionable whether grades correlate with real achievement. Certainly a high school diploma cannot be taken with any confidence to indicate that its holder possesses high school level skills.

Looking below the surface of this problem, one finds that a factor in the lack of good evaluation is the lack of clear goals. Since purposeful seeking after goals is one of the prime characteristics of a system, it becomes clear that educational institutions do not demonstrate all the properties of a true system. Without goals, effective evaluation, feedback, and corrective action become impossible. The system tends to continue its processes regardless of the quality of the output, while it gets further and further out of phase with its environment.

The accountability movement seeks to build the missing elements of goal establishment evaluation, feedback, and corrective action into educational systems. The philosophy and system conceptualization of accountability should not be narrowly identified with any particular approach or technique, but it is instructive to look at each of these approaches to see how they attempt to supply the missing processes, and how goals and objectives are established.

In external performance contracting,[1] the goals, objectives, and levels of performance are specified by the contracting agency (and usually set forth in a Request for Proposal). Evaluation is rigorous and specifically geared to the objectives so that, at the end of the contract period, a statement can be made whether the goals have been met. Feedback is the publication of this information, and corrective action is the paying or withholding of the performance bonus. The obvious strength in this approach is the clarity of objectives, but there is nothing to indicate that these objectives are well founded in good educational philosophy. The most obvious weakness is the inappropriateness of the corrective action. Short of permanent employment of the contractor by the school system, it is doubtful whether his financial profit or lack thereof can have any lasting impact on the instructional program. The analysis of internal performance contracting[2] is similar, except that the teachers who contract with the district will probably stay with the district and whatever they learn can have long-term impact.

Voucher plans[3] place the responsibility for goals, evaluation, feedback, and corrective action in the hands of the parents. The parents make a selection from among the various schools available to their children by whatever criteria they consider important. The goals are strictly those of the individual parents. At the end of each school year they evaluate their children's progress, again by their own standards, and take corrective action by either allowing the children to continue at the school or transferring them to another. This kind of corrective action is quite dramatic and would certainly have an effect on the schools, though whether for good or ill is a matter of debate. Insecurity about the wisdom and competence of parents to set the goals (select a proper school) underlies many of the criticisms of voucher plans.

External program audits[4] provide only one link in the feedback chain, and a minor one at that. The auditor does not evaluate directly;

[1] See pp. 15-17 for a discussion of external performance contracting.

[2] See pp. 17-18 for a discussion of internal performance contracting.

[3] See pp. 18-19 for a discussion of voucher plans.

[4] See pp. 19-20 for a discussion of external program audits.

he monitors the instructional and evaluation processes to see that they are conducted competently and according to plan. His reports go to the contracting agency (usually the school) and the funding agency, but there is no assurance that corrective action will be taken if irregularities are discovered. This does not indicate that audits are ineffective, only that they do not provide true accountability by themselves. An audit can be an important component in an accountability system.

PPBS and other systems approaches [5] come closest to fulfilling all the requirements for a true system of accountability. Establishment of goals and objectives is a major effort, evaluation is systematic, and the results are fed into the decisionmaking processes at the appropriate points so that corrective action can be taken.

Analysis of the various approaches that have been advocated, and in some cases implemented, demonstrates that there is no one approach that is best. In its attempt to achieve accountability a school system can employ any combination of the approaches described herein, or none of them. The task should be viewed broadly as first, establishing goals and objectives, and second, developing systems for evaluations, feedback, and corrective action.

Establishing Goals and Objectives

Over the years many blue-ribbon commissions, at national and State levels, have convened to set goals; but it is difficult to trace any important changes in practice to their efforts,[6] Educational philosophers have articulated goals, but their scholarly works are generally considered reflections of movements already in progress, rather than motivating forces. School districts traditionally adopt official statements of goals, which are then subsequently filed for retrieval on official occasions. Systems analysts have developed detailed and systematic procedures for establishing goals. Many of their statements of procedures are quite impressive to read, but they usually are based on an implicit faith that people, and particularly educational decisionmakers, make decisions on a rational basis and that goal setting is a straightforward and orderly process—beliefs not always borne out by experience.

There are few practical and concrete suggestions that can be made for the establishment of goals; it seems that each district must evolve its own process of goal setting. It is a political process. To be effective it must involve students, parents, teachers, and anyone else affected by the decisions. Participants must be willing to confront their own values and to make compromises which are often painful. Effective goals must reflect the realities of the world students live in and the possibilities of the future world for which they are preparing. Priorities among goals must be established, since planners universally overpromise. Goal setting is not a static or linear process, since a school district cannot simply set goals and move toward them in an unrelenting fashion; a continuous process of review should be provided.

Deriving Objectives

When the necessary compromises have been made and the goals established, and when priorities have been set, more specific and focused performance indicators are needed. The most well developed indicators are behavioral or performance objectives, short-range, operational statements of learning outcomes necessary to achieve goals. Robert Mager (1962) and Popham (1966) have described the behavioral objective as a small observable piece of behavior which the student can exhibit after learning. The objectives include statements about the conditions under which the student is to exhibit the learning, and the degree of proficiency he will need to show in order to demonstrate

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[5] See pp. 21-22 for a discussion of PPBS and other systems approaches.

[6] National Assessment of Educational Progress is a data-gathering project designed to provide specific information about concepts, skills, and attitudes of students from across the United States. It is an attempt to determine the state of knowledge among students in writing, reading, science, citizenship, literature, mathematics, and music. This national effort is often seen as an attempt to obtain accountability, but this is not the case. Actually, national assessment should be considered as distinct from accountability; however, its findings may some day provide a data base with which to compare output of individual school systems. See, for example, *Mathematics Objectives*. Ann Arbor, Mich.: National Assessment of Educational Progress, 1970.

that he has learned what was intended. The behavioral objective has a public nature: anyone can reliably and repeatedly determine by observation or measurement the degree to which it has been reached.

The work of Gagne, Bloom, Krathwohl, and others in developing hierarchies or taxonomies of educational objectives has demonstrated the need to teach the higher, as well as lower, order skills of synthesis, analysis, application, knowledge, and understanding. They have convincingly argued the need to measure not just what is learned but whether the learning can be used. These are important suggestions to counter the powerful reductionist tendency to restrict accountability to those areas where assessment instrumentation has some aura of respectability, e.g., the lower order basic skills. The danger is that those subject areas which are sampled can come to dominate the rest of the curriculum. Because the basic skills can be more easily measured, students are given increased doses of reading and mathematics while the humanities and fine arts are neglected. Teachers want a good report card too, and they realize that they are only judged and rewarded in the school system on the basis of the performance of their students in reading and mathematics. The tendency to measure only lower skills can be overcome by consistent use of one of the taxonomic schemes. And the tendency to focus on basic skills can be overcome if all the goals are measured, even if some methological compromises have to be made.

However, certain cautions about the use of objectives must be made. One Office of Education project attempted to compile a complete set of behavioral objectives for high school. Before the project was abandoned, 20,000 objectives had been written. Each teacher would need a full-time clerk to monitor all of the objectives and assess the students' attainment of them. Compromises in the direction of less coverage, and in some cases less specificity, must be made. It is difficult to refrain from "teaching to the behavioral objective," which is akin to "teaching to the test" and can degrade the quality of instruction, making it shallow and convergent and forcing evaluation on unimportant grounds. When subjects like mathematics are broken down into microelements and each element is separately taught, it is not clear whether integration of those elements into the original whole will be possible. Furthermore, it may cost more to write hundreds of behavioral objectives and to evaluate them than it costs to teach the subjects. Although these drawbacks exist in behavioral objectives, they remain one of the best alternatives to standardized testing yet developed, and they must be used with wisdom.

Evaluation

In practice, evaluation has tended to become an end in itself, isolated from the decisionmaking process. The purpose of evaluation cannot be simply to disseminate information; the information it generates must be used to determine whether there is a gap between the anticipated performance and actual outcomes and what changes should be made. It is essential that pertinent data be made available at every level of the educational system and be used to make the important decisions about the future course of the system. Home conditions, ethnic origin, peer group pressures, socioeconomic environment, prior educational experience, resources available at school, and the quality of management and support all contribute to some portion of the variation in learning outcomes. The problem of evaluation is to identify that portion for which each variable (input element) is responsible. Evaluation must be performed in a serious and objective manner by professional evaluators with appropriate skills in measuring and interpreting performance data. Evaluation must be advertised as a method to improve education and not as a method for judging teachers, if the usual resistance to evaluators is to be reduced. (See a following section for a more technical discussion of educational evaluation within a framework of accountability.)

Closing the Feedback Loop

One of the most important and neglected steps in the feedback cycle is the transmission of assessment data to the proper place in the system for its effective use. Reports tend to sit on shelves and gather dust in file drawers,

never to be used except to make more reports. There is a widespread belief that this situation has been corrected by requiring audits and evaluation reports to be sent to funding agencies at regular intervals. But there are two problems with this practice; first, there is no reason to believe that these are the agencies that need the data to make corrective changes, and second, there is no systematic way in which this information is acted upon to bring about a change. Rarely is the data referred to when decisions are made about future programs or their design. It is even rarer to find a competent interpretation and evaluation of the reports to discover whether the evaluation system is accomplishing what it was established to do. When committees receive evaluation reports, they quite often do not refer to the original plan or grant application to discover if the stated objectives have in fact been met. Without the closed feedback loop, the accountability system is simply another evaluation system.

A Data Base for Corrective Action

In the traditional school, student measurement is generally used to "facilitate teaching," that is, to rate students' abilities so that they can be tracked into homogeneous groups of various kinds. But the results of student performance tests are seldom used to systematically change and improve the instructional process. Accountability seeks to change the emphasis in test interpretation from project justification or teacher convenience to improvement of student performance.

Title I of the Elementary and Secondary Education Act specified that evaluations must be made, but does not require that they must be used, say in future planning and in program improvement. And so, despite the billions of dollars spent on special remedial and dropout programs and evaluation of those programs, no one has learned how to stop "underachievements." Accountability requires planning, action, assessment, interpretation of data, change, and then reevaluation. The evaluator's job does not end when the data are complete and analyzed; he must be active in every stage of the accountability process.

Evaluation results must also be summarized and made available to the public in "open" form, with interpretation understandable to the layman. Raw scores must be explained; testing conditions, type and size of population tested, type and size of school, generalization restrictions, and significant effects defined. Interpretation must be directed to the needs of all possible decisionmakers, including program and school administrators, board members, State legislators, and Federal Government representatives. Effective reports recommend improvements; they are not vehicles for reinforcement of the status quo or a legitimizing process for a predetermined policy. They tell the truth about the success or failure of a program and attempt to explain why it was or was not effective. Evaluators can and should help decisionmakers make rational, data-based judgments about the relative worth of alternative courses of action. On the other hand, lack of client understanding of results, poor packaging, and poor scheduling of reports can increase resistance to evaluation and accountability and handicap decisionmaking.

The crux of the argument presented in this section is this: accountability should not be thought of as a particular approach (i.e., PPBS) or methodology (i.e., criterion-referenced measurement that employs behavioral objectives). It is a set of processes which introduce system into an educational enterprise. The system view makes it clear that goals must be established, and these goals must be more than mere window dressing: they are serious, working statements of the knowledge skills that the system seeks to provide. Further specificity is gained by analyzing goals into performance indicators, like behavioral objectives. These objectives become the standards by which output (student progress) is evaluated. Evaluation results in reports outlining discrepancies between actual student performance and the objectives. But the evaluator's role does not end there; he must interpret the data and communicate it to those who make the decisions and do the work of instruction. Channels and linkages must be systematically built so that information about the quality of output can flow continuously to those in a position to make corrective changes —whether administrators, project directors,

teachers, or students. And, of course, these changes must be made. The system must be willing to overcome its own inertia. Those who would use accountability must learn to look below the surface of their program to discover the underlying processes at work.

SPECIFIC PROGRAM APPROACHES TO ACCOUNTABILITY

To many people, accountability is a completely new idea in education; but, in fact, approaches to accountability have appeared from time to time in the past. One of the first known examples occurred in the 15th century at the University of Bolegna when students demanded that professors teach according to a schedule that covered entire texts in a logical sequence. The professors were fined according to their noncompliance with the schedule. Accountability was first an issue in America in 1647 when Massachusetts passed the Old Deluder Satan Law, which required that parents finance their children's education and that children be properly taught reading and writing in order that they might delude the devil. Those parents, teachers, or town councils who defied the law were fined five pounds. In the 1970's in Britain and Nigeria, students were paid a sixpence for each successfully written examination in reading, writing, and arithmetic.

Accountability as a movement probably began in 1965 with the Elementary and Secondary Education Act, which required that programs for educationally and culturally deprived children be evaluated and assessment data be made known to State and local education agencies, as well as to the Federal Government. This act asked for an accounting of the relationship of Federal funds to student progress, as well as an analysis of educational needs, problems, objectives, and tasks. However, it could not be characterized as true educational accountability because school districts were only required to render an accounting but were not obliged to make use of the findings of the evaluation. Thus, little corrective change was produced in the projects, and much Federal money was spent on data that remained unused. More recent accountability efforts, such as performance contracting, have incorporated methods for ensuring that data are used and that the feedback loop is closed.

External Performance Contracting

External performance or incentive contracting is a method for organizing and funding educational programs, and is a means by which a school goes outside its own bureaucracy to obtain technical assistance from private companies. Most of the companies involved in performance contracting use innovative techniques such as individually prescribed instruction, teaching machines, company-designed educational materials, and electronic learning at the student's own rate. Many use paraprofessional aids, open classrooms or learning centers, inquiry circles, and student as well as teacher incentives or reinforcements for meeting performance goals.

Many school districts have turned to performance contracting because they do not have the management expertise to correct the problems confronting educators today. For example, one-fourth of all students in the Nation have great reading and mathematics deficiencies; school costs are rising without an apparent increase in student progress, even in compensatory programs; and school administrators are resistant to change. Through performance contracting, a well-planned system is brought to the schools and operated without the traditional administrative constraints.

Typically a school, school district, or local education agency (LEA) composed of schools and community members announces its goals and objectives (specified in measurable terms) to potential contractors in a formal Request for Proposals (RFP). Qualified external groups are invited to present proposals indicating the tasks necessary to achieve a specified set of goals and objectives, detailing the methods to be used in accomplishing those tasks and in assessing success in meeting the behavioral objectives, and in maintaining financial and administrative accountability. Usually the RFP describes the school's needs, the population to be served, time and cost constraints, and available resources. Proposals are evaluated on the basis of rationale, methodology, cost effectiveness, and corporate commitment. If the contracting school has a firm already in mind, the contract can be noncompetitive or a "sole source" contract. If not, a contract is drawn up between the school or district and the party submitting the accepted proposal. An outside Management Support Group (MSG) may be

hired to aid in preparing the RFP and negotiating the contract, as well as providing technical assistance in the adopting of the program by internal school personnel. Once the "key" has been turned over by the contractor to the school, the contractor can continue to give assistance in a "turnkey phase" of the contract in which the school takes over the operation of the program.

The performance contract states the goals and tasks that the contractor is liable for, the conditions under which he is liable, and the financial and administrative responsibilities of both the contractor and client. It stipulates that the contractor will receive either a fixed fee, or a range of amounts of compensation according to the magnitude of measurable gains in student learning produced by their programs and services. It also describes potential uncontrollable economic, technological, political, and social changes which might affect fulfilling the contracted goals. Long-range goals are described in terms of short-range performance objectives, or measurable performance tasks. For example, within the long-range goal of "knowing elementary mathematics," a student should be able to recite and write the multiplication tables correctly. Statements are also included about the intended authority and administrative coordination for accomplishing these tasks with statements of the time and effort commitments of each administrator.

A performance contract program should include an information system which explains the accountability effort to school or district staff as well as introduces new skills and helps to change negative attitudes. A structured staff development program is essential because a new program cannot be a success unless the involved parties are committed to it and understand how to make it function.

An Independent Educational Accomplishment Audit (IEAA) can be performed by an outside evaluator to insure the quality of the contracted program and proper expenditure of funds, culminating in a public report of findings. An independent evaluation may also be performed to insure objectivity of the measurement of student progress and analysis of that data and to determine the extent to which the contractor was able to fulfill the contract.

Probably the best known and most notorious example of performance contracting was the 1969 effort in Texarkana, Texas. Using funds provided for dropout prevention by title 8 of the Elementary and Secondary Education Act, Dorsett Educational Systems of Oklahoma agreed to remove reading and mathematics deficiencies in 400 seventh-, eighth-, and ninth-grade students. Dorsett was to be paid on the basis of student progress. Evaluation showed that students had indeed progressed, but they did so because some teachers "taught to the test," that is, they emphasized those items in the curriculum on which students would later be tested. This unanticipated procedure invalidated student learning scores, although other benefits were derived from the experiment, such as improved attitudes of students, considerably reduced dropout rates, improved attendance, reduction in vandalism, and an increase in favorable publicity for the school.

Since 1969 more than 100 performance contract programs have been implemented in the United States, representing many types of curriculums, programs, and incentives. A recent Rand report (Hall & Stucker, 1971) summarizing an evaluative study of performance contracting in the U.S., under a contract from HEW, concluded that, in the eight programs investigated, performance contracting was a valuable agent for introducing "radical" changes in education which were not possible in the schools' regular operations, but that efforts to produce improvement in reading and mathematics skills were inconsistent. The Office of Economic Opportunity, a major source of funds for performance contracts in 18 cities, has recently decided not to continue its financial support of the external performance contract technique after the publication of the Rand report.

Low-achievement gains may have been due to the use of standardized tests, which may not provide an accurate measure of performance contract results. The fact that performance contract programs must rely on standardized test scores for validation may well reduce the effectiveness of accountability in educational reform. Performance contracts often fail to solve the important technical problems associated with measuring actual, relevant, and long-term gains in student performance.

In most cases performance contracting is profitable to private industry since it generates

continuing programs such as turnkey contracts. The contractors do not lose any money on truants, dropouts, and low-IQ students who are excluded from the program, and receive funds for gearing up and and reaching the half-way point. Large profits can be had from normal errors of measurement on statistical tests since 25 percent of all scores are spuriously high if subjects are chosen on the basis of low scores on a similar test. Private industry can deduct any losses to the cost of operations, their products get used, and they receive wide publicity so that some firms can afford to fail to meet their contracted goals.

Performance contracting can also aid the general cause of accountability for student learning and for educational products by teachers, contractors, and school administrators since the performance contract is the most specific existing form of teacher accountability. Performance contracting encourages reading, involvement of the community in policy planning and operations, and helps to reduce the cost of teaching mathematics, reading, and vocational training. Additional advantages of performance contracting are that educational outcomes are clearly spelled out and schools are forced to define needs, goals, and objectives. Most contracting firms are highly motivated by potential incentives, and performance contracting makes available to schools additional outside expertise.

However, the technique also has many disadvantages. Performance contracting programs often narrowly focus on reading and mathematics skills for which performance objectives are easily defined and measured. They also emphasize the engineering and financial aspects of education while the more creative skills and fine arts are neglected, encouraging reductionism. The arguments against performance contracting say that education becomes more standardized, mechanized and less humanistic; they say that learning cannot be guaranteed like a new washing machine. Performance contracts can be too costly and mechanized, complex for adoption by the school district. The contracting firm may suffer from management problems itself or it may oversell underdeveloped products. There may often be a conflict between the contractor and contracting agency about curriculum or the way in which progress is to be made, since results, not the process or resources, are contracted for. And finally there is the argument that performance contracting will take the determination of educational policy out of public hands, and will establish a new monopoly of education by private industry and subvert the collective bargaining process.

Many contracts make no provision for slow learners, individual differences in children's capabilities, retention of learning, and the motivation to learn. Once the student leaves the highly motivating environment of the performance contract program (where tangible incentives are often offered) and returns to the regular classroom, what happens to his desire to learn?

Performance contracting is probably most effective in the installation of complex innovative programs for which the learning environment must be reorganized and the teaching staff retrained. In this case, the crux of success is the turnkey phase in which the school takes over and runs the new instructional system. Learning objectives should be developed with community as well as professional involvement and with provisions for maximum use of school personnel; and they should provide for external and objective auditing and the objectives should be agreed upon by school boards, local education associations, and teachers. Minimally, performance contracting will have a positive effect on individual schools or districts because it necessitates the identification of goals, objectives, problems, and their possible solutions.

Internal Performance Contracting

The internal performance contract method differs from the external contract method only insofar as the school or district contracts with a department, an individual, or a group of teachers within their own system to perform a task. A formal contract may be written in which goals are specified, performance objectives defined, and conditions of payment specified. Like external contracts, internal contracts can be fixed price or performance based. Less formal contracts between a school system and an internal group of teachers are often called merit pay programs; teachers receive either fixed or graded increments to their base salaries on the

basis of student gains. In most cases the teacher groups agree to teach one or two particular subjects under the contract, and the school research department or outside evaluators measure student gains to determine the amount of merit pay. Teachers are encouraged to use whatever techniques and materials they can find or invent to attain their objectives.

Most of the disadvantages and advantages of external contracting also apply to internal contracting. One disadvantage peculiar to internal performance contracting is that the same teachers are teaching the same students, using the same techniques but with incentive pay. Although teachers will be more motivated to increase student gains, without new teaching techniques their effectiveness cannot be greatly increased. Some internal performance contractors elect to take commercially offered inservice training courses and purchase the help of educational experts and management support groups. Often contracts require that internal contractors seek outside aid. This allows them to gain some of the expertise of the external companies without incorporating the technological bent and the profitmaking attitude; and at a lesser cost to the school. Certainly internal performance contracting is an effective way to increase teachers' desires for additional training, and it can also increase their freedom to use and develop new teaching techniques, student incentives, and innovative curriculums. Internal performance contracting is an effective vehicle for rationalizing collective negotiations between teachers, school boards, administrators, teachers, and teacher organizations.

The Voucher System

The voucher system is another method that has been identified within the movement for educational accountability. This system would place authority over the child's education back in the parents' hands by allowing consumer choice, and forcing the schools into a competitive market. Parents would be given vouchers representing the cost per pupil of 1 year's education for a given district. Parents could then present these vouchers to the school of their choice: public, private, profit, or nonprofit. Public and private schools would receive their only funding from claimed vouchers, and dissatisfied parents could remove their children from one school and enroll them in another. Thus schools would be forced to be accountable in order to survive, as all parents would have the opportunity to choose whatever they consider to be the best educational institution. It is expected that schools would undergo improvement as a result of competition, and the system would further integration, individual freedom, and divergence and specialization in education.

The Office of Economic Opportunity has conducted a feasibility test of this system, but to date no voucher systems can be called operational except, of course, the GI Bill. The system is still theoretical and has to undergo construction, use, and testing. Christopher Jencks, the major advocate of the voucher system construct, sees the first step in implementation as the establishment of an educational voucher agency (EVA) to replace the traditional board of education in a community. The EVA would be locally controlled and would receive Federal, State, and local financing. The EVA would not operate its own schools but would assume financial responsibility for them, issuing vouchers and ensuring education for all local children. The EVA would set basic eligibility requirements for schools to be able to convert vouchers into cash. In short, the EVA would regulate the marketplace and disseminate information on how each school is performing.

While the school boards would retain responsibility for the operation of their schools, their personnel, and their curriculums, the EVA would be the overall regulatory body. For example, the EVA would ensure that schools would be open to all applicants and that no school could discriminate against students or teachers on the basis of race or economic status; that schools would enroll a proportion of minority students as large as the proportion of minority applicants; that vouchers would be the sole form of financial aid to schools; that schools could not accept or require additional out-of-pocket payments; that religious education could not be supported by voucher funds; and that all schools would make information available to the EVA about basic educational philosophy, facilities, number of teachers and courses, financial status, and pupil progress.

This theoretical system has encountered opposition on many fronts. It has been argued

that it would undermine the public schools, result in greater segregation, and violate the separation of church and state if parochial schools were included in the system. Albert Shanker speaks of the vicious cycle that would ensue if 50 percent of the parents in one area decided to send their children to private or parochial schools: the public schools would be half empty, half the teachers would be laid off, neighboring schools would be consolidated for efficiency and economy, and surplus buildings would close. Growing private institutions would need teachers, buildings, textbooks, and materials and would turn to the closed public schools' facilities and the unemployed teachers. The schools would be back where they started: the same children, the same teachers, the same buildings—only the schools would be changed from public to private.

Objection has been leveled that EVA would be politically controlled by those currently dominating the local school boards. However, Jencks argues that today's public schools have a captive audience and the voucher system would free them from political and managerial constraints. They would no longer be required to acquiesce to the desires of politicians in order to survive. Under a voucher system, he says, surviving schools would be those that attracted applicants which would qualify them to run their own affairs in their own way.

Other objections to the voucher system center around a lack of faith in parental judgment, that parents would select mediocre institutions and eliminate high quality schools and that the EVA would have great difficulty in maintaining quality control in all the various kinds of schools which would be created. A counter argument claims that the voucher system would expand the public and private schools by forcing them to admit outsiders; some racially and economically exclusive suburbs currently attempt to restrict access to good public schools. But most opponents of the voucher system are more worried about the lack of restriction the system would encourage. They fear the development of a system in which schools vie with one another in terms of social or academic exclusiveness, such as colleges do now, by restricting admissions to the brightest children or by charging additional out-of-pocket tuition in order to limit the number of low-income children. The EVA must rigidly enforce the regulations so that these restrictions would not be possible. The resolution of these fears must await the actual implementation of a voucher system, and until such a time, the voucher system merely remains an interesting theoretical approach to achieving accountability.

External Audit or EPA

Another technique for promoting educational accountability is the external audit, or educational program audit (EPA), now being used on a pilot demonstration basis with Elementary and Secondary Education Act title VII and VIII funds. The EPA auditor is independently hired by the school system in which the program is being conducted. He verifies the results of internal performance control systems, such as the evaluation system, by an external quality control. The auditor is analogous to the certified public accountant who reviews the accomplishments of industrial and business firms, but the audit is different from an evaluation because it is directed toward a public statement of accomplishments and does not provide recommendations for program improvement. Audits are status- and accomplishment-oriented. Auditors certify whether the evaluation instruments and findings of the program were valid and the expenditure of funds appropriate. The EPA represents the most specific method of achieving accountability presently available. Expenditures of funds are highly controlled and measurements of them are reliable, predictable, and internally consistent. Several auditors can measure the same thing and arrive at the same answer. Thus people unacquainted with the program being assessed can perform audits more likely to be impartial, and therefore credible, than internal evaluators.

The U.S. Office of Education provides a training class leading to the certification of educational auditors. USOE has defined auditing activities in terms of two stages: developmental and operational. During the developmental phase, the auditor reviews and criticizes the evaluation design. During the operational period, the auditor makes site visits to the program to investigate expenditures and interview program personnel, and prepares public reports of findings.

The audit alone cannot be relied upon to achieve accountability because it is not concerned with the goals of the educational program, only its results. The audit cannot take into account the structure of the system within which the program must operate, a system often vulnerable to irrational management. Nor can the program be changed on the basis of an auditor's findings, because recommendations for change are not included in the auditor's evaluation.

Systems Analysis

Applied to education, systems analysis is a generic term for a variety of techniques such as Program Planning and Budgeting System (PPBS), Planning Evaluation Review Technique (PERT), Critical Path Method (CPM), computer simulation gaming, etc. Systems analysis usually implies a procedure for designing a closed, self-correcting system to attain specific objectives, and it stresses the interrelationships of the system's parts. The methodology includes problem identification, needs assessment, goal setting, specification of objectives in measurable terms, and restatement of objectives in terms of capabilities and constraints. It also calls for development of possible approaches for attainment of objectives, selection and implementation of approaches on the basis of a study of possible alternatives, synthesis of the approaches into an integrated system, evaluation of the effectiveness of the system in meeting its objectives, and finally, revision. Since program funds are usually scarce, most systems analysis includes program budgeting which reflects a consideration of present and future costs of the program. Limitations on resources are studied and budgetary priorities are set. Needs assessments are attempts to determine the discrepancies between what is learned and what should be learned in the schools. It assumes that the relevancy of education to student needs must be determined from the outset, preceding educational planning, design, and implementation.

Kaufman and Corrigan (1969) describe systems analysis as the process that determines the requirements for getting from "what is" to "what should be," and consists of analysis of the requirements for problem solution. They identify the analytical steps of mission analysis, function analysis, task analysis, and method-means analysis (Kaufman, 1971).

Systems analysis includes several techniques for selecting alternative solutions, such as network-based tools like PERT and CPM. PERT and CPM allow the description and monitoring of the operation of a program and enable better management control of the educational implementation process. PERT uses a pictorial, event-oriented network representation of the time, organization, and duration of tasks of an entire program. An event is defined as a point in time marking the beginning or completion of a task. PERT uses three time estimates for each task: optimistic (the time in which an activity can be completed if everything goes extremely well), pessimistic (the time in which an activity can be completed if everything goes very badly), and most probable (the most likely time in which an activity can be completed). The probability of meeting deadlines and schedules is calculated to assist management in evaluating the project status (Knezevich, 1969).

Many programs use a combination of PERT and CPM. CPM is an activity-oriented flow-chart representation of the longest or critical path in terms of time and tasks through the program. Each task on the path must be completed as necessary. Costs and resource availability are identified with each task to give management a basis for choosing schedules and monitoring the program (Knezevich, 1969).

These tools are best applied when all program requirements are delineated, the methods and procedures are selected, and only remaining task is that of maintaining control over the entire process. For example, once a teacher has selected topics, materials, and techniques, flow charts may be prepared to show the order of presentation of topics and associated materials, test administration dates, due dates for grades, and so forth.

Another technique closely associated with systems analysis is computer simulation or the study of real systems through the use of analogous models generated by computers. But application of such business models to the education system can only be a loose fit. Rigid adherence to these models can be damaging to students, educational programs, and the cause of accountability because efforts to an-

swer students needs and to conduct good educational programs could be subordinated to efforts to force fit the program to a technological goal. In many cases, local schools and school boards do not have the time, money, or expertise to make proper use of the techniques. However, the underlying philosophy that any production can be made more effective by planning, organization, and evaluation, is a most important concept for educational use.

PPBS

Program Planning and Budgeting System (PPBS) is a management tool to enable the smooth functioning of a program and facilitate the implementation of accountability. It can be considered a first step in an accountability effort because it is designed to facilitate decisions by identifying relationships between product quality, quantity, and costs for various alternatives. PPBS has been associated with accountability because a PPBS program holds a school system responsible for performance in selecting correct objectives and assigning them appropriate priorities, achieving all of the stated or implicit objectives, and avoiding adverse affects on pupils.

It includes a classification of fiscal and other data which is intended to facilitate analysis and decisionmaking about future allocation of resources to competing elements in a program. Alternatives for attaining objectives are specified and related to resources demanded by each alternative. Analysis then compares benefits attained in relation to the costs. Like any accountability system PPBS is goal-oriented, and management is performed in terms of these goals. PPBS aids in transforming decisionmaking into a scientifically organized procedure. The American Association of School Administrators Commission on Administrative Technology prefers to call PPBS a "resource allocation decision system," because the letters PPBS do not include important parts of the process such as analysis and evaluation (Knezevich, 1969). Basic to PPBS is cost effectiveness assessment or cost/benefit analysis, a measure of the extent to which the resources allocated to a specific objective, under each of several alternatives, actually contribute to the effective accomplishment of that objective.

PPBS takes a systems approach to education; it defines formal procedures for setting goals, identifying the tasks and funds necessary to achieve these goals, accomplishing the task, analyzing programs to select among alternative ones, measuring success in accomplishing the goals, and revising the process for improvement. A PPBS-defined goal is a statement of broad direction or intent that is general and timeless, and unconcerned with a particular achievement within a given time and under desirable conditions. The attainment of the objective advances the system toward a corresponding goal. Program analysis is the process used in PPBS that identifies programs responsive to stated goals and objectives. The process of program analysis begins with the definition of a problem and ends with a recommended solution. Program development carries this adopted solution to the point where it can be used at the district level.

The State of California requires all school districts to use the PPBS method. PPBS concentrates on evaluation of district programs, not individual teachers. Goals are set by the district board of education, supposedly taking into concern the community's needs; but individual teachers and their immediate supervisors determine behavioral objectives for students' learning, using teacher job descriptions and preset educational goals. Teachers are evaluated primarily in terms of the progress their students make toward achieving the behavioral objectives.

One of the most difficult problems encountered in implementing PPBS is the translation of vague objectives set by district boards into precise operational or behavioral objectives. Most classification systems for educational budgeting resort to the traditional names of the curricular subjects taught. School district staffs lack the special analytical expertise needed to implement PPBS, and teachers resist the system because it tends to degrade the quality of instruction by requiring excessive time and effort in developing short-term behavioral objectives, and because of its reductionist effects. Program planning can further reinforce specialization of subject departments by fragmenting the curriculum and possibly perpetuating unethical manipulation of children (Gage, 1971).

Brumbaugh (1971) argues that PPBS is destructive because it is prescriptive, deductive, and ends-oriented, and that it encourages minimum proficiency. He says that PPBS must be descriptive rather than prescriptive and the process inductive rather than deductive. District goals must be descriptive of what is going on, not prescriptive of what ought to be going on.

The lack of local school control is another hindrance to the success of a system like PPBS. The State board of education has the final decision on how district resources will support programs and in what order of priority. Many board members in large districts argue that they have only a general notion of how well the district is meeting its objectives and of the results of the overall budget decisions that were made. However, the PPBS system can be valuable as a method to pave the way for accountability because it demands that users plan ahead, organize, determine priorities, and compare output to goals. The trend toward administrative decentralization, in which the decisionmaking authority is shifted from the central to the local administrators or individual school principals, can increase the effectiveness of PPBS systems and foster accountability. This shift of authority can increase professional responsiveness to local conditions and encourage community initiative. It allows responsibility for results to be decentralized and increases the probability that performance objectives will be more relevant to community needs.

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EVALUATION

It is a matter of dispute whether accountability is a subset of evaluation or vice versa. This report treats accountability as the more inclusive concept. Evaluation is the heart of accountability because valid assessments must be made in order to determine whether promises have been kept. Evaluation focuses dispassionately on the discrepancies between stated objectives and outputs, providing feedback about the degree to which objectives have been met and the subelements of the system have functioned properly.

What Is Evaluative Research?

The term evaluation became popular in the 1930's when there was widespread use of tests and inventories of personality, achievement, intelligence, and vocational interest. The basic model that was used compared the individual to the average population (the norm) to measure individual differences. This measurement of psychological traits evolved as the field of psychometrics, the study of measurement of mental performance that has generated the assessment tests in use today.

Evaluation research is conducted to determine the value of what is investigated. It involves making judgments and providing data as the basis for future decisionmaking. It is applied research and differs from classical research in several ways. Classical research is conclusion-oriented; it is a highly controlled method of developing new knowledge, testing theoretical hypotheses, or discovering or explaining new phenomena. Applied research is more often descriptive and decision-oriented. Taking place as it does outside of a research laboratory, it is often difficult to obtain samples of subjects that have identical relevant characteristics to ensure that all subjects undergo the same experimental treatments, and that extraneous variables are not contributing to observed changes in behavior. Evaluative studies that have attempted to use psychological or classical research models have often yielded data that is uninterpretable and costly to the layman for just these reasons.

Who Should Evaluate?

Evaluators may be internal or outside consultants, an individual or a team, academic or nonprofit, a business firm or a citizen group. The team approach is often most effective because no one person has the time, knowledge, skills, and access to do everything. Some educators believe that the citizen group, if provided with the proper staff, can be one of the most effective team approaches to evaluation. But evaluators must be chosen who are objective and knowledgeable about the area they are evaluating, or the evaluation will probably neither ask nor answer the right questions. A compromise must be made between choosing an evaluator who can be completely objective, but who is totally unfamiliar with the educational program, and a less objective evaluator who knows about the program and can investigate it efficiently. It is important for the client to know the background of the evaluator so that biases can be interpreted and compensated for.

Types of Evaluation Studies

Evaluation studies can be differentiated by their content and the decision area to which their data will apply. For example, a curriculum evaluation would determine the effectiveness of a specific curriculum design and content. A cost benefit analysis can correlate benefits produced in a program to their individual expenses. A system assessment will determine the needs in a situation and the subsequent goals necessary to meet those needs. A program evaluation will assess a variety of programs to select the one most appropriate. A program implementation assessment will determine whether a program is being introduced and conducted according to an original plan.

The evaluation processes most often associated with accountability are formative and summative, cost-benefit assessment, and systems assessment. *Formative evaluation* is a continuing study of an educational process from its inception to its finish that supplies constant constructive and specific feedback to guide the development of the program. A *sum-*

mative evaluation is a one-time investigation of one or more completed programs to provide information relevant to the planning, acceptance, rejection, continuation, or alteration of that program. Formative evaluation is most helpful when attempting to choose among those aspects of a program the ones that are most workable and will improve the program most effectively. Summative evaluation aids in determining the characteristics and effects of a completed program for the purposes of adapting, adopting, or rejecting the program for further use. This technique more closely approximates classical design and methodology, and wider generalization can be made of the summative results than with formative evaluation data since no ongoing program could keep all of its procedures constant so that the conditions for rigorous evaluation of them could be met. Often in formative evaluation the clients specify the objectives and help plan, conduct, and interpret the investigation. In summative evaluation the evaluator is more often an objective or neutral outsider who works independently to obtain more complex, generalizable information. But in both cases, evaluative data is focused on all components of the education system and can be used for accountability purposes to provide constructive feedback and to change and improve what was investigated. The abundance of types of evaluation studies emphasizes the fact that evaluation can no longer be thought of simply as the measure of an individual student's success or failure in a particular program. The instructional program itself must withstand evaluation in relation to other available alternatives for improved learning. Accountability applies to the means as well as the ends.

It has also been argued that the cost/benefit analyses usually included in educational program evaluations merely tell how much it costs to keep a student seated in school for a year. True cost/benefit analysis requires sophisticated measurement and analysis techniques beyond the financial resources and the scope of expertise usually found in schools and educational evaluation organizations. The suggestion has been made that it would be better to use a learning-unit cost: the total sum including teachers salary, portion of total building expense, cost of texts and other educational materials, cost of inservice teacher training, cost of research and evaluation studies, and so forth, which are required to move a student from one skill level to the next. A standard learning-unit cost would allow comparison among schools. For accountability purposes, the costs should be higher in schools with majorities of culturally and educationally disadvantaged students than they would be (and presently are) in schools with majorities of higher socioeconomic status students.

Evaluation Procedures

Whatever the type of evaluation, each must be organized along basic steps for implementation: specification of goals and information requirements, selection of variables to be measured and development of an evaluation design, selection of appropriate measurement techniques and instruments, collection of data, selection of data analysis techniques, interpretation of data analysis, and preparation of a report.

Often the client will determine the problem area of concern, but the evaluator must understand the total decision processes and information requirements of his client. Also the client and evaluator should clarify for each other their separate expectations and understandings of goals, roles, and processes in the evaluation study. Simultaneous evaluations conducted by different evaluators should be avoided at all costs because of their damaging effects on evaluation results and educational programs; for example, program staff are kept so busy responding to various evaluator's requests that they cannot properly run their program and, in the end, give hasty or inaccurate information.

Evaluators often hastily prepare the experimental design in their rush to select standardized tests or to prepare questionnaires. The test selected or instrument designed should be determined by the requirements of an overall research and development design that specifies the reasons and methods for measuring stated variables and what the possible outcome and their interpretations might be. The evaluator must choose a population to study and appropriate sampling techniques, and decide whether there is a need or opportunity to measure control groups or comparison groups, whether pre-

and post-treatment measurement indicating changes are necessary or obtainable, whether grade equivalency scores, national assessment data, or other criteria will be used as standards for one-time measurements, and whether norm-referenced or criterion-referenced tests will be chosen.

Several variables and behaviors can be considered in evaluation for accountability purposes in order to determine whether the educational objectives of the program or school have been met. Attempts should be made to obtain qualitative and quantitative data on inputs to the educational process such as personnel, equipment, communications, organization, planning, decisionmaking, evaluation, facilities, allocation, funds, etc. An evaluator should also assess the type, organization, and characteristics of educational techniques and the educational process.

Most important, data should be collected on the educational output: in the short run on students' performance in regard to cognitive and affective behavioral objectives, in knowledge acquisition, skill development, attitude change, and dropout and tardiness rates, and so forth; in the long run on collective effects of a program on students' future progress in school, changes in long-term knowledge retention, self-awareness and esteem, socialization, effective social interaction, aptitude, and desire for learning in a new situation. However, if the evaluator relies too heavily on behavioral objectives he may not be open to unexpected effects of the experimental treatment, and the program might be short changed in the evaluation. This is another form of reductionism that can operate in an accountability system. A method to overcome it is to measure the learning process as well as output and to take into account the ultimate decisionmaking functions to be served by the evaluation. For example, in order to encourage artistic expression on the part of students, criteria should be developed which measure the number of attempts by students to express themselves rather than specify the particular nature of the output. This kind of "process objective" can be used to encourage all the higher level skills and development of attitudes, self-esteem, etc. If achievement standards are rigid, or if they are considered the sole evaluative criterion, they can impede educational progress.

Research Design and Measurement

Once an evaluator has determined the variables to be investigated, he must decide which methods of measurement will give him the most useful information and allow him to draw relevant conclusions about his findings. The usual educational evaluation is an assessment of the effects of a particular program on a student sample. The goal of the research design is to isolate particular effects of the program and determine the causal variables directly related to them.

Two designs are most often used in these educational program evaluations. In the first, students are their own "controls." Their knowledge about a subject is measured before and after they receive an educational program in the subject by pre- and post-treatment tests. Scores on two equivalent tests are compared; if the only significant variable that changed the subjects' performance was the educational program, then the change in scores can be attributed to the effects of that program.

The second type of design makes use of a separate control group. Randomly selected experimental subjects receive the program to be evaluated and their test scores are compared with those of randomly selected control subjects continuing with their usual course of instruction. If both the control and experimental groups are selected in a totally random fashion, the two groups can be considered equivalent and any difference between average group score cannot be attributed to a characteristic specific to one group or the other. But samples can also be stratified or paired, e.g., specific numbers of subjects having certain characteristics are included in both groups, or pairs of subjects having identical characteristics are separated into the control and experimental groups. Causal assumptions can then be made about the differences between group scores on the same test administered to both control and experimental groups at the termination of the program. In experimental and control group comparison testing, subjects in the two types of groups may not be randomly selected or matched on all relevant characteristics and

nonrandom subject dropout may occur. These situations add error to comparison measures. Artificial (or intentional) selective sorting of the population can also bias measurement. For example, program developers may "cream" the population, sampling for only the brighter or more capable students, or special self-selecting programs may inadvertently attract the well-motivated or brighter students.

However, evaluation research in the real world often cannot be so clearcut. It is hard to rationalize matching up two samples and then depriving one of a beneficial educational program for the purpose of the evaluation. And a nonmatched, but supposedly equivalent, control group that is not given any special selection treatment and is not receiving the program rarely is equivalent to the experimental group; randomness is rarely obtained and so results are uninterpretable. Moreover, the educational program is never the sole influential variable affecting a student's behavioral, nor is the program even consistent since teaching styles vary, and changes in learning cannot be attributed entirely to a particular program. School environment, crowding, peer type, diet, home environment, socioeconomic level, teacher personalities and teaching styles, and testing conditions all combine in various ways to affect that change. It is difficult to determine how much effect was contributed by each variable without sophisticated and expensive statistical techniques and models that allow investigation of the interaction among variables. The very fact that added interest is shown in the control group can elevate their scores, even though that group does not receive the experimental program. (Of course, this positive Hawthorne Effect subtly aids the cause of accountability as simple interest in how students are doing can increase their motivation.) The fact that no one variable is accountable for the change in student learning points out the fact that groups of educators and not individuals must be held accountable, and that student performance cannot be used to assess individual teacher performance.

The standardized test is a further source of anxiety for the evaluator trying to measure and interpret the results of an educational program. Short-term performances, let alone long-term performances, cannot be reliably measured by the administration of one standardized test. In the process of test taking many chance errors occur. For any one test score there is a 25 percent probability that the score is too high or too low. Test errors can only be eliminated by averaging the results of many test administrations to the same subjects, but it is difficult to use one test to measure performance increases resulting from a specific experimental treatment because test takers learn to score well on a test simply by taking it repeatedly. They become "test wise." Thus it is dangerous to classify low achievers on the basis of one test score and then attribute the success of a program to the fact that these low achievers increased their scores on an equivalent test because they may have done so by chance. Failure to recognize this basic instability of test scores can lead to incorrect conclusions about the effectiveness of remedial programs for students selected on the basis of low-achievement test scores.

Both IQ and grade-equivalency scores have been called "statistical monstrosities." IQ has been described as a "dubious normative score based on an impossible assumption about the equivalence of human experience and the opportunity to learn" (Dyer, 1970). A grade-equivalency score also assumes an equality of learning opportunity, and both are subject to the fallacy of misplaced concreteness (and thus cause reductionism) not to mention variation due to the student's maturation, the testing conditions, the timing of tests, the student's attitude, and finally, pure chance.

Many test instruments used in schools were designed for purposes different from those for which they are being used. For example, normative tests which compare students with each other have been used to compare educational programs or to indicate individual student progress. Criterion tests compare a student's performance with an objective absolute standard, instead of with the performance of other students or norms. One needs to question whether norm-referenced tests or criterion-referenced tests are more effective indicators of pupil progress for accountability purposes. The traditional, standardized tests are norm-referenced and the standards for score interpretation are the other students' scores. Standardized, norm-referenced tests are designed to give a sum-

mary of overall achievement for the purpose of comparing students, but they are not valid indicators or predictors of an individual student's progress. Normative test scores are meaningful only in comparison to the scores of others. The procedures used to construct and establish norms for these tests tend to exclude the focused, specific questions necessary to judge the performance of a particular student for purposes of diagnosis and monitoring of progress, as well as the kinds of items which allow for evaluation of a particular curriculum or instructional procedure in terms of its ability to impart specific skills and knowledge to students. Items on standardized tests have been selected purely for their ability to discriminate between high and low scores in the total test. Thus, any of the items that are answered either totally correctly or incorrectly by all subjects are eliminated because they do not indicate student differences and make the assignment of comparative grades difficult. This is why it is said that standardized, norm-referenced tests have high reliability (yield consistent scores for repeated testing of large groups of test subjects), but low validity (accurate measurement of any particular bit of knowledge or skill).

Another way of looking at a norm-referenced test is to compare it to traditional grading practices. Many teachers grade on a normal curve which calls for approximately 10 percent A's and F's, 40 percent B's and D's, and 50 percent C's. This distribution of grades cannot be assigned if all students are able to answer all items on the final test. If the teacher insists upon grading on the curve, he assumes that most students will be mediocre and some will fail to accomplish the objectives of the course. Similarly, the norm-referenced test is designed to show how subjects' scores are distributed on a normal curve, while the specific purpose of using performance objectives is to demonstrate movement of students from a condition in which most do not have mastery of a specific skill or piece of information to a condition where most do have mastery. Because of the incompatability of these two purposes, in the long run all items which are directly related to specific performance objectives and which would demonstrate mastery are eliminated from norm-referenced tests by their designers. These and other design features of norm-referenced tests make them less appropriate for student evaluation and program evaluation. Test designers have been preoccupied with decreasing errors by developing tests that provide the same results when repeatedly administered, but this test reliability is obtained at the expense of content validity, e.g., the characteristic that a test measures what it is supposed to measure. Evaluators must use tests that measure what the program being assessed is designed to accomplish in order to draw safe conclusions about program effects. Evaluators need to know what has been learned rather than how well students compare with one another, in order to suggest improvements in an instructional program so that it can effectively meet the needs of the students.

Since most standardized tests are only indirect rather than direct evidence of learning, and since correlations of test scores with performance on many specific education tasks are often low, there is a growing demand for criterion-referenced tests for measurement of performance and achievement. This type of test can be tailored specifically to the behavioral objectives and content of particular units of instruction and allows an estimate of what the students learned as a result of instruction.

Criterion-referenced tests can best indicate whether a student who knows nothing when first tested had learned a subject when tested a second time. Items which few students pass either before or after the course indicate necessary revisions in the course. Likewise, items which most, or all, students pass on the pretest indicate that the instruction to follow will be redundant. The use of criterion tests can, therefore, provide an assessment of the appropriate level of content and skills for instruction. Items which most students fail on the pretest and pass on the posttest indicate that the course in "on target" and the students are learning. However, a caution is necessary: items which no student passes on the first test and all students pass on the second could simply be irrelevant or dependent on jargon picked up in the course. There is no guarantee that a criterion-referenced test is less subject to sampling errors than a norm-referenced one. It is also questionable whether performance in a testing situation is a reliable indicator of the

benefit from instruction since performance on micro tasks cannot be used to make inferences about complex behavior and because it is very difficult not to "teach to the test." In many cases the best solution for evaluation design is to use both types of tests, or tests with both types of items.

Another source of testing error is the difficult and confusing test instructions and administration procedures which can introduce irrelevant factors into the scores. Also, observers coding classroom behavior may not use consistent coding techniques from observation to observation, and teachers may change grading standards during the course of the year, causing artificial increases or decreases in scores. The use of inappropriate test designs and formats for the target populations, like the timing of a test (students tested in the early morning may be more alert and perform better than they would if tested after lunch) and the effect of practice (taking a test several times can artificially increase scores in the second or third administration) contribute to unreliable measurement. Another problem is the issue of payment to subjects. Paid subjects often behave differently and have different motivations than unpaid subjects. Other uncontrolled variables occurring between the first and second measurement, such as the introduction of a substitute or student teacher, may alter students' attitudes toward the program as a whole.

The drawbacks in using standardized tests for educational evaluation have generally been recognized. Observation interviews, checklists, questionnaires, opinion surveys, time logs, minutes of meetings, "soft" or qualitative data, and other less obtrusive measures are often used in program evaluation in the attempt to circumvent the drawbacks of standardized tests.

How Are Evaluation Data Analyzed?

The usual data analysis technique used to handle the complex variety of variable operating an educational evaluation consists of very complex statistical analyses of the relationship between student performance and the student, teacher, program, and environment characteristics. However, most school research departments and many independent evaluators are not equipped to use these expensive and sophisticated techniques. Recent thinking has suggested that, in evaluation research, the usual statistical tests of significance of effects have been overused, that the expense and sophisticated techniques necessary for using complicated data analyses cannot be met, and that the need for probability tests and advanced methodology is small. In most situations simple descriptive statistics such as means, standard deviations, frequency count, and percentages, and simple tests of the significance of difference between means, are more likely to be used and interpreted correctly than complicated analyses in educational evaluation.

In summary, the major hazards of evaluative testing are selecting the wrong objectives, selecting the wrong test, misinterpreting test scores, and adding to the depersonalization of education. The social consequences are far reaching: testing can perpetuate discrimination, or increase pressures to achieve tangible rewards such as grades, or alienate educators from the principles of accountability since they are responsible for improving student performance on irrelevant measures. Finally, testing limitations do not facilitate the identification of those educational programs which really do cause learning and increase accountability. The solution to these problems does not lie in finding ways to use existing measurement instruments, but in finding new and more valid measurement techniques, such as long-range followup studies, to measure the relevant variables.

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CASE STUDIES OF ACCOUNTABILITY

Five case studies have been included in this report which provide illustrations of specific attempts to implement accountability systems. The case studies were prepared from materials submitted by the program directors.

The Portland, Oregon, and Grand Rapids, Michigan, experiences provide insights into the planning and development of internal and external as well as fixed-price contracts applied to elementary and secondary education.

The Seattle, Washington, effort is an example of the external program audit technique applied in higher education.

The Syracuse, New York, program describes the general system approach to the planning and organization of an elementary and secondary educational program in such a way that teachers and administrators are accountable for pupil progress.

Finally, the Hillsborough, California, program study describes the use of Program Planning and Budgeting Systems (PPBS) to systematically organize a school system so that it can more readily be made accountable.

Portland Public Schools Performance Contracting

Portland, Oregon

In 1969-70 there were two major performance contracting efforts. Texarkana, Texas, received a great deal of attention nationally, but the Portland Public Schools' project was relatively unpublicized and for this reason was chosen as a case study to illustrate performance contracting.

In fall 1969 some Portland school administrators began to discuss the possibilities of providing bonuses to teachers or teacher teams for exceptional progress achieved with pupils in Elementary and Secondary Education Act title I schools. It was decided that educational equipment vendors as well as teachers could participate in the performance contracts, and that considerable flexibility would be allowed in writing the agreements to encourage and test a variety of contract plans. No additional funds were sought for the project, and no turnkey or intermediate agencies were included. Anticipated outcomes were discussed with enthusiasm in several meetings with district administrators and school principals, but the discussions were not free from apprehension since there was no known precedent at that time for the idea of performance contracting in public schools.

The first of five contract agreements written during the 1969-70 school year was a "guaranteed" lease plan with the Audio Visual Supply Company of Portland, Oregon. Conditions of the project included stipulations about class size, physical facilities provided by the school district, pupil attendance, teacher training, and testing procedures. The equipment and software were leased for 5 months at $240 per month. A few more than 100 pupils in grades seven and eight at Boise Elementary School received 40 minutes of project instruction each day. Measurements of reading improvement attained were to be based upon the total class performance, and it was agreed that pupils who did not complete at least 80 hours of instruction would not be included in the calculation of the achievement gains. The heart of the agreement was the reimbursement schedule: if no gains were demonstrated, the company would provide 90 percent reimbursement to the school district. Each increment of 1-month gain would reduce the percentage of reimbursement by 10 percent. The company would retain the entire fee if a gain of 9 months occurred. The gain for the 5-month period was 50 percent greater than the expected gain for pupils enrolled in the project. Reasons for the gain were attributed largely to the capability of the audiovisual system to individualize instruction. Other important factors which could account for improved results were (1) a special interest on the part of the vendor to assure that the equipment was used to the best advantage, (2) improved recordkeeping procedures to chart the daily progress of each pupil, and (3) the special attention and motivation produced by a new, experimental procedure.

At the same time the audiovisual contract was written, a similar agreement with a publisher of a new reading method was being considered for use in another title I school. Teachers in the second school were generally pleased with the proposed plan and the materials to be provided by the publisher, but they believed they could do as well with their own plan for improvement of instructional procedures. It was agreed that the amount of $1,500, which would have been used to purchase the new reading program materials, would be credited to the teachers if they could secure the stipulated gains. The payment schedule provided that 10 percent of the bonus would be awarded to the teachers for each month of gain in reading scores registered by the total group of 100 pupils. The teachers decided that any funds gained would be used to purchase equipment and supplies for the school rather than for teacher bonuses.

Gains produced, as measured by standardized reading achievement tests, exceeded expected levels by 115 percent. The increased effectiveness of instruction was attributed largely to intensive small-group instruction and the use of curriculum materials better suited to the ability levels and interests of the pupils.

Summer Programs

As a result of the successes registered by

the first two projects, it was decided to expand the contract activities during the summer. All teachers assigned to title I (Model School) classes during summer 1970 were invited to participate in contract agreements. Teachers, teacher teams, or vendors could propose whatever plan seemed promising; diversity and creativity were encouraged.

Seven payment formulas were suggested, all of which provided 10 dollars for each weighted pupil-month gained. Differences between payment formulas provided choices between base salary amounts and commission schedules. The low-risk formula provided the largest salary base, while those offering highest commission elected by the teacher or vendor for each option was computed by the formula: Payment = WP × AG × 10 ÷ NT, where WP = weighted number of pupils, AG = average number of months gained, 10 = estimated value of each weighted pupil-month gained, and NT = number of teachers to be paid as a result of the group gains. Measurement of gains would be obtained by comparing the results of testing during the first week of school in September with the test scores obtained during the first day of summer school.

About 40 teachers attended the first invitational meeting in June to hear about the performance contracting offer. Although school principals had predicted an enthusiastic response to the idea, teachers seemed generally disinterested. Vendors, on the other hand, were confident about their product and eager to sign contracts. The Open Court Publishing Company, in fact, was willing to guarantee all teachers a 30 percent bonus for participation in a cooperative venture to improve pupil reading achievement. This offer was explained to teachers in a second invitational meeting which was also attended by about 40 teachers. In spite of the guarantee that no salary would be lost and a guaranteed bonus of at least $200 would be paid, few teachers were interested. A short time later, however, a team of five teachers at Woodlawn Elementary School decided to review the Open Court system and materials, and agreed to participate in the contract plan.

The Woodlawn project was based upon two separate but related contract agreements. The primary contract between the teachers and the school district involved no base salary; payment for summer session instruction was computed entirely from the contract formula ($ = WP × AG × 10 ÷ NT). The teachers then subcontracted Open Court to provide materials and consultant assistance for the project. No payments were to be made to Open Court unless the gains made by pupils were sufficient to earn more than $900 for each teacher. Pupil gains below the $900-per-teacher level would produce a loss for Open Court, and gains above this level would be shared with teachers on the basis of 80 percent for Open Court and 20 percent for the teachers.

Seventy-three pupils, with a weighted value of 130, in grades 4-8 received the benefits of the Open Court instructional system. Measured gains were 28 percent above the gains expected by statistical calculations, but considerably below the optimistic gains anticipated by Open Court. The school district saved more than $2,000 in salary payments budgeted for teachers, and Open Court lost more than $3,000. However, teachers using the Open Court reading system rated it superior and asked the school district to consider large-scale use of the company's methods and materials.

The fourth performance contract was, in some ways, the most suspenseful. A few days before the opening of the summer session, one teacher at King Elementary School signed a total formula-payment contract. This high-risk agreement stated that payment for the summer session would be dependent upon the reading achievement gains made and retained during the summer by the 55 pupils in the group. Payments earned, if any, would not be available until after testing was completed in September. In the event of a performance loss it was stated that the teacher would forfeit money to the school district in the amount calculated by the payment formula.

The challenge to produce maximum reading achievement results during the summer was accepted with zeal; and the teacher tried several approaches above and beyond standard experimental instructional procedures. She emphasized the importance of reading to her pupils and provided high-interest materials for pupils to read at home. Detailed records

of individual progress were maintained, and pupils were commended at every opportunity. Meetings with parents were held to review the goals of the project, and notes of each pupil's progress were sent home at the end of each week. At the end of the 5-week session, pupils were given materials to read during the remainder of the summer. There was no way to determine whether the materials were read, but it was hoped that the motivational activities of the summer session would provide some momentum for further reading. When the 55 pupils were retested in September, it was apparent that the extra effort was worthwhile. As a group, the pupils had gained approximately twice the amount expected, and the teacher was paid nearly twice the amount she would have received working on a salary basis.

The fifth and final performance contract written in Portland was an equipment and materials lease agreement with Larrabee and Associates Co. A reading laboratory system was installed at Sabin Elementary School to serve 100 pupils in grades 4-6. The payment for the lease of the equipment was to be computed on a "double-or-nothing" basis. It was agreed that the gains made by pupils using the reading laboratory must be at least twice as great as the expected gain or no payment would be made for the lease of the equipment.

The program was judged successful by the summer school teachers, but there were no data available for a more objective evaluation of the outcome. It was decided that the cost of testing and the inconvenience of scheduling tests to be administered by testers would not be worth the experimental data obtained for this project. The equipment vendor was therefore paid the total amount of the lease plus a consultant fee.

Evaluation

A cost-benefit analysis of the total performance contracting project in Portland revealed exceptional gains for the funds expended. Three vendors, 10 teachers, four teacher aides, and about 450 pupils participated in the project for a total additional school district cost of only $850. But additional reading achievement benefits obtained were estimated to be worth $6,150. The resultant 7:1 benefit to cost ratio is the highest attained in any of Portland's other experimental education projects.

Future Directions

Despite the success of performance contracting in Portland, there are no plans for continuance at this time. Plans for large-scale contracts involving many teachers and substantial funding had been developed but were cancelled after national teacher organizations expressed opposition to performance contracting and local groups generally followed suit. Although the Portland project was nearly twice as large and more comprehensive than the Texarkana project, most Portland teachers knew more about the controversy in Texarkana than the success in Portland.

Portland's present plan to encourage the development of more effective instructional procedures is called "Investment Capital Budgeting." It is similar to performance contracting in that agreements are written and signed by district administrators and school personnel, additional funds are provided for additional needs and efforts, measurable goals are requested, and favorable project outcomes are expected. Chief differences are that investment capital funds provided are not contingent upon project outcomes (although ineffective projects are not likely to be continued), and motivation for the improvement of instruction is dependent upon professional dedication without additional bonus or payment incentives.

Contract Learning

Grand Rapids, Michigan

In 1970 the Grand Rapids Public School District entered into three guaranteed performance contracts with three educational technology firms. The district dispensed with the help of an RFP and an MSG, and proceeded into the new programs by trial and error, thereby encountering several difficulties from which readers of this report can benefit.

Guaranteed performance contracts were written with Alpha Learning Systems, Westinghouse Learning Corporation (now Learning Unlimited) and Combined Motivation and Educational Systems (CMES). Contractors were expected to increase student gains in reading and mathematics by 1 year as measured by a nationally normed, commercially available standardized achievement test. The contractors' minimum guaranteed fee was increased on the basis of student grade gains, e.g., a grade gain of 1.00 to 1.24 would accrue $75 for each student per subject, and payment increased incrementally with student-gain increases through a gain of 4.00 and above $150.

Alpha Learning Systems

Alpha Learning Systems specialized in educational classroom management services and was involved in the Office of Economic Opportunity's Remedial Performance Incentive Project. Alpha based its performance guarantee on the premise that regular school teachers can teach just as well as outside representatives of hardware-oriented private industry if they receive the training and tools of innovative techniques. Alpha used commercially available curriculum materials, and students worked individually at their own pace on programs prescribed for them on the basis of diagnostic test results by Alpha personnel and teachers. Students worked on brief intensive units and were tested at the completion of each unit. Students were given immediate tangible feedback. If performance was inadequate the teacher provided individual aid. Students doing well on a particular unit were rewarded with token money called Supplemental Knowledge Incentive Notes (SKINS). Accumulated SKINS could be used to rent games, toys, record player and records, art materials, and other amusements in a "free" or "reinforcing events room." The Alpha staff worked closely with the teachers, and a floating representative of Alpha was available to instruct them in the use of the program and to work on problems with teachers.

Westinghouse Learning Corporation

Westinghouse Learning Corporation (WLC) operated comprehensive learning environments called Learning Centers which provided an independent and self-managed learning experience for students in each participating school. Th goal of the WLC's program was to aid students in developing mature approaches to education and a sense of familiarity with the school system so that each student could better control his own educational development.

WLC tailored curriculum components to the needs of each student through the use of diagnostic testing and individual prescription. WLC used commercially available instruction materials such as programed texts and self-instruction workbooks supplemented by WLC-developed prereading materials and an introductory program in modern mathematics. WLC used a point system to reward effective learning behavior as well as appropriate classroom behavior.

Combined Motivational Education System

The Combined Motivational Education System (CMES) used a motivation-centered instructional program developed for grades 6-9. The CMES program provided a six-phase achievement and motivation curriculum designed to aid in the student development of self-concept and self-actualization. The program emphasized sharing, success, strengths, values, conflict management and reinforce-

ment. The CMES program was highly machine-oriented. Teachers prescribed individual programs for students on the basis of student need assessment. Students worked on their study programs in individual carrels using tape recorders, tapes and workbooks.

The Grand Rapids school district performed a subjective evaluation of the performance contracts in spring 1971. The district decided to fund two types of contracts for 1971-1972, and accordingly renamed the performance contract program Contract Learning. Both performance-based contracts and fixed-price contracts were arranged. The CMES performance contract program was continued, and Alpha II was awarded a performance contract to teach educable mentally retarded (EMR) students (the first performance contract effort for the EMR in the Nation) and a program for middle-school students in reading and mathematics. Fixed-price consultant contracts were awarded to Learning Unlimited and Alpha II for the teaching of reading and mathematics in four elementary schools to the "alternative education students" participating in a dropout prevention and social rehabilitation program, and for conducting a junior high school reading program.

Evaluation

An objective assessment was made of the Grand Rapids performance contract efforts by Rand Corporation for the program's funding agency, the Office of Economic Opportunity. The results were mixed: student increases were not outstanding but the program had valuable side effects. Grand Rapids made its own assessment of its programs as well and found both successes and failures. Most Grand Rapids District personnel agree that the major value of the performance contracting experience has been the individualization of curriculum of students. The diagnosis of student's needs and the prescriptive remedial curriculums appear to be meeting the needs of students. Student prescriptions representing learning modules taken from multiple resources have allowed teachers to break away from the single text philosophy and to consider the ways in which students learn most effectively, as well as the content they should learn. This variety of approaches as well as the blend, mix, and management of materials have constituted a seemingly successful method of individualizing the curriculum.

Another successful innovation is the introduction of paraprofessionals to the teaching team. The use of teacher aides has reduced the adult-pupil ratio, which frees the teacher to teach and the paraprofessional to assist students in locating materials, follow flow charts, operate machines, and score progress checks.

The behavior modification techniques and reinforcing events rooms were successful in motivating students with a "right now" reward. It is agreed by educators that educationally deprived students are not generally motivated to work hard during one school year in order to pass to the next grade. However, when the teacher contracts with the student by saying, "If you do "X," I will give you "Y," or "If you complete this lesson and achieve a 90 percent score on the progress check, I will give you ten SKINS and 10 minutes' time to spend it in the reinforcing events room," the students are motivated. Teachers are beginning to change from extrinsic to intrinsic rewards by fading out material reinforcement and replacing it with praise, checks, stars, etc. One teacher reported recently that a student requested to spend his recess period in the classroom completing a task because "he knew how to do it and was having fun doing numbers."

An important byproduct of the performance contract effort has been the encouragement of internal reform of the school district. The most significant evidence of reform was the development in 1971-1972 of the modified turnkey or fixed-price consultant contracts. This method was adapted as a result of staff efforts to evaluate the performance contract programs, and is proving very successful since the teachers were able to obtain autonomy from externally imposed curriculums and budgetary control.

The Learning Center room—which provides for a teacher-manager, ample materials and supplies, and a student recordkeeping system—has proved to be a creative alternative to the regular school. This modified departmentalization system in the elementary schools is a program style that many companies are

advertising for individualized programs and should be encouraged. Staff members feel that their productivity has increased and that they have benefited by their introduction to the principles and concerns of cost-effectiveness and behavioral objectives.

Grand Rapids also discovered that student attendance increased and student attitudes improved during the performance contract years. The schools have been forced, under contract, to insure that student attendance is high, and thus a greater effort has been made to discover why students don't attend school. Students are "turned-on," feel successful, and have an improved self-concept from participating in the contract programs.

Problems

Grand Rapids has encountered problems as well as successes. By plunging into contracts with outside companies without the benefit of a detailed scope of work stating exactly what Grand Rapids wanted and what its objectives were, and without a Management Support Group, Grand Rapids district personnel found that their objectives and expectations did not always match those of the contracting companies and that the local personnel lacked some of the expertise that could have been supplied by an MSG. The district also lacked an adequate information system for teachers and contractors to continue a dialog about problems, goals, and expectations. District personnel had problems defining lines of authority and division of responsibility between Grand Rapids schools and the three outside contractors. Teachers were not sure who the building leader was and whether they were responsible to building principals or on-site contractor personnel managing the programs. Contractors did not provide enough assistance and training for the principals to become curriculum directors of the programs and to conduct programs in the event of turnkeying. These problems were exacerbated by the lack of an information system. The commitment of the local teaching and administrative staff to the program was weakened, which lessened the probability of program success. However, Grand Rapids has now begun to build an information system and is learning to tie minimum guaranteed fee payments to contractor performance in order to maintain quality control.

Other problems encountered by Grand Rapids schools included the inappropriate test administration and inadequate testing conditions used by contractors. A scope of work might have specified tests appropriate to the Grand Rapids population, but the testing conditions may have been unavoidable due to the efforts of OEO and school systems to avoid replications of the Texarkana testing problems. Substitute teachers, given a minimum of training and assigned to unfamiliar groups, administered the tests. The tested children were fearful of the tests as well as anxious about the presence of clearly unmotivated teachers.

Final Analysis

Generally, however, the Grand Rapids District concluded that performance contracting, subjectively evaluated, appeared to increase accountability for student learning. Grand Rapids personnel feel good about what is happening to kids in their district. One former principal commenting on the Alpha program said, "These kids are coming to school everyday and staying all day! They are turned on! Last year (1969-70) they spent most of their year in my office, now I hardly see them." With turned-on kids and improved learning and classroom behavior, local district personnel feel confident with their 1971-1972 contracts.

PSRMAC Program Audit

State of Washington

Background

In 1969, 10 community colleges in the State of Washington formed a consortium to promote post-secondary education for ethnic minorities. The organization was named the Puget Sound Regional Minority Affairs Consortium, or PSRMAC. PSRMAC chose five major areas of activity in which to plan and implement minority programs: recruitment, services, ethnic studies, minority faculty/staff, and testing. As a condition of consortium membership, each college was required to endorse a statement promising affirmative action in these major areas. Funded initially by State "exemplary" funds, PSRMAC received money from the State legislature to conduct minority programs in 1971-73.

The question of accountability to the State legislature, and the need to allocate the funds among colleges, raised the issues of criteria and methods by which objectives could be achieved. The tasks of the development of such criteria and methods and their application to the PSRMAC colleges were assigned to the research and planning unit of the State Board for Community College Education. The project that emerged out of the assignment became known as, and is now called, the PSRMAC Program Audit or "Mod Squad."

PSRMAC was chosen as a case study because (1) it illustrates the external audit approach to accountability and (2) it represents an accountability effort in higher education.

Approach

The PSRMAC Program Audit has four major goals: to determine priorities in major areas of college activity; to evaluate programs, resources, and results by areas; to gather and analyze data on college-level minority programs; and to develop and test indicators of program performance. The first two goals are "qualitative" or judgmental, and the third and fourth are "quantitative" or empirical-analytical.

An early decision was made to assign the qualitative goals to one team and the quantitative goals to another. The qualitative team viewed its task as that of helping consortium colleges assess their minority programs. The quantitative team was concerned with developing a data base on which program evaluations could be made. This division necessitated a difference in style as well as approach. Thus, procedures were needed to reconcile judgments with data; some of these are discussed later.

Methodology: Issues and Problems

By far the greatest problems have arisen in the qualitative area of the program audit. There are wide differences in the administrative structures of the minority programs in the participating colleges. Many of the minority affairs directors have ill-defined roles and few opportunities to make decisions. Inevitably, assisting management requires a disproportionate amount of time in the assessment of programs. It also follows that the methods of program assessment have to be improvised to fit the needs of each college; and, since accountability for program successes and failures cannot be easily assigned, evaluations become that much more difficult to make.

For the quantitative team, the picture is somewhat better. The research and planning unit was able to obtain improved figures on college-by-college minority enrollment, figures on high school minority populations by community college district, and 1970 census figures on minority populations, again by community college district. Minority enrollments, therefore, can be rigorously analyzed by several different criteria. Figures are also available on full- and part-time minority faculty and staff. The data on programs and registrants are weaker; and test-relevant data, such as dropout rates and cumulative transfer grade-points, are practically nonexistent. It was originally hoped that some of these gaps in the data base might be closed by the management assistance

of the qualitative team, but the attempt was abandoned because it appeared to conflict with the team's main mission.

The procedure now being followed to coordinate the quantitative and qualitative aspects of the PSRMAC Program Audit works as follows: All information available on a college, previously analyzed by the staff, is placed in a college folder by a predetermined format, which is then reviewed by the qualitative team members. The facts in the folder are used as the basis for discussions between the team and the college staff. Reports and impressions are gathered by the qualitative team during field trips to each campus, and are sorted and arranged according to a program questionnaire format, which is added to the college folder. Finally, consortium-wide generalizations and conclusions are extracted from the college-by-college folders. The entire process is planned to take 8 to 10 weeks.

Because of the experimental nature of the PSRMAC Program Audit, several advanced techniques were proposed for pilot testing at different stages. Some of these were tried on a limited basis; others were seen as ideas which could be incorporated into a less experimental approach, or as concepts having some applicability in different forms of program assessment. Some of these techniques, by title only, are: (1) Vector Norming: use of multiparameter norms on a single area, e.g., enrollment norms by population, high-school potential, etc.; (2) Relevance Matrices: either for staff review of impressions or for participatory prioritizing and evaluation; (3) Information-Access Checklisting: the standard checklist procedure, familiar to program audits, applied to the inventory of access to information at a college level in order to prepare management information system formats.

It is not yet known whether any of these techniques can be successfully incorporated into a continuing audit procedure. The techniques will be reviewed in the feedback and evaluation.

Feedback and Evaluation

All the results and the procedures of the PSRMAC Program Audit will be reviewed by the research and planning unit. The participation of minority affairs office personnel who are not on the audit teams will provide an ethnic perspective in determining the value of the audit approach. The results will then be presented to the PSRMAC Minority Affairs Directors Council and the Consortium Commission. Recommendations arising from the audit will then be presented on needed changes in procedure and on criteria for self-evaluation of programs. Finally, the relevant aspects of the PSRMAC Program Audit will be presented to statewide educational agencies and the State legislature. This final review is the most crucial, since it will have a bearing on the financial future of the consortium.

Comments

That a major undertaking of this sort was even launched on a pilot basis is due to three factors: the prior cooperative relationships of a consortium with defined goal commitments, of a research and planning unit that had worked with the consortium, and of a State minority affairs office able to act administratively on minority problems; the recruitment and training of a staff that had enough familiarity with campus problems and management methods to improvise analytical techniques as well as assistance strategies; and the imperatives imposed by the need for legislative refunding and State support which created some sense of urgency at the State level.

These conditions are not sufficient to ensure the success of an advanced pilot audit as described here; however, they are necessary. Given these conditions, an ambitious project for a multiethnic, multicampus program audit can undoubtedly be designed and attempted. Care should be taken, however, to prevent such an audit from becoming a self-serving justification for existing programs, by emphasizing the review and feedback procedures in the post-information-gathering phase. It also seems necessary to have such audits performed by qualified research and planning teams, rather than functional administrators, to leave room for self-analysis and improvement of the audit's own techniques and procedures.

A System Approach to Accountability
East Syracuse-Minoa Central Schools

New York

Setting

The East Syracuse-Minoa Central School District was formed in 1961 from the centralization of a number of small school systems. Most of the residents of the district own their own homes, work in the local plants or the city of Syracuse, and are socioeconomically middle class. From the time of unification until the late 1960's, the district was preoccupied with the problems of implementing the centralization decision. Before this, the schools within the district behaved as autonomous units loosely tied by a common board of education, a central administration, and a budgetary procedure. Formal intra-district communication tended to be vertical. There was a minimum of horizontal interaction for participatory goal determination, priority setting, problem solving, or organizational development. When the national movement for accountability emerged, the inertia of the district caused resistance. However, taxpayer revolts, decentralization, and rising teacher militancy began to pierce the armor of "business as usual." These forces and the appointment of a new superintendent set the stage for the initiation of the project to be described.

Interpretation of Accountability

Accountability means that a school system openly accepts the responsibility for insuring and documenting student growth as a direct consequence of instruction. Implicit in this interpretation of accountability are the following linkages: (1) student performance is a direct function of teacher performance, (2) school building performance is a direct function of principal performance; and (3) school system performance is a direct function of central administration performance.

Before any meaningful change can take place in a school system, people must be made to feel the need for change. Creating awareness among school staff is an extremely time-consuming and frustrating process that is not without its political risks. Careless intervention tends to generate defensive and closed behavior from those who hold the lion's share of the power. The back lash usually cripples future change efforts. Cognizant of these dangers, the administration engaged the services of a professional organizational development consultant to help assess needs and design a long-term strategy for change.

Strategy

The cornerstone of the strategy was involvement and commitment of building principals. The strategy was designed to minimize perceived threats by the principal and to maximize the likelihood that the principal could recognize, identify, and internalize the need for change.

The decision was made to intervene in the system at the levels of building and central office administration. The initial stage of the strategy was to create an integrated management team that was receptive to national forces and willing to work together for the common good. Simultaneously, the teaching staff was to be provided with information about national accountability events. The second stage of the strategy was to have the newly created management team prepare a district position paper to set forth the broad goals of the district and initiate the first visible move toward a districtwide accountability system. The position paper was to be distributed to the staff and discussed at faculty meetings. The third stage of the strategy was to create awareness among the teaching staff members of the need for change. This was to be done by feeding the staff information and interacting with them at workshops and faculty meetings and in committees. When the need for change had been established in their minds, the strategy called for the formation of districtwide task forces to begin the creation of an accountability system.

The Management Team

Given the existing relative autonomy of the school principals, the initial strategy step was to form an administrative council that would meet regularly. One object of the plan was to use this forum as a tool to foster communications and create an awareness of districtwide problems among administrators. Another purpose was to use the council meetings to achieve consensus about decisions with disrtictwide implications.

The primary purpose for forming the administrative council was to produce a management team that would create and implement an accountability system. The administrative council would serve as the vehicle for training the team in the skills of goal setting, priority establishment, decisionmaking, evaluation techniques, communications, and group dynamics.

Late in spring 1969, shortly after the formation of the administrative council, the district contracted with an expert to conduct a systematic statistical study of the district's educational effectiveness as revealed by an analysis of IQ scores, standardized test results, teacher grades, and New York State Regents results. At the same time, the district arranged to participate in the Indicators of Quality study to be conducted during 1969-1970 by Columbia University. Meanwhile the testing division of the pupil personnel department was instructed to collect, organize, analyze, and disseminate individual pupil and class records within the district. These arrangements were made in order to collect hard data that would assess the quality of education in the district. The strategy called for this data to be presented to the administrative council at the appropriate time.

Once formed, the administrative council met monthly. The agenda for the meetings were established approximately 2 weeks ahead of time by a small subcommittee. Each administrative council member had the opportunity to submit items to the subcommittee for inclusion on the agenda.

From the perspective of the principals, the council's initial meetings were frustrating experiences. Considerable ambiguity existed about what the superintendent expected. The principals' past experiences as autonomous building heads had not prepared them for assuming the roles of decisionmakers. Consequently, their initial behavior was marked by minimal risk taking. When they did venture to express themselves openly at a meeting, their remarks were almost always directed to the superintendent.

The central office staff were also uneasy. Their past experiences were similar to those of the principals, and they too were not sure of what the superintendent expected of them. However, because of their standing in the organizational hierarchy, they occasionally would take risks, confronting the principals with questions.

In order to promote the council's development, the organizational development consultant attended the meetings as an observer and provided immediate feedback. When matters stalled, he would share his perceptions with the members and focus their attention on the issues which he observed to be raised and then skirted by the group. By continually confronting the group with itself, the consultant was giving the group experiences in dealing with itself.

In addition to attending council meetings, the consultant met privately with each administrator in sessions designed to assess each administrator's perceptions of his own role and his relationship to other administrators and the administrative council. To deal with discrepancies in perceptions, meetings of the council were held in which differing role perceptions were openly discussed.

By spring 1970, the council had developed to the point that its member were freely debating substantive issues. At this time then the results of the district needs assessment survey were made available to the administrative council. In addition, the council was given the latest literature dealing with the emerging national accountability movement. These materials dominated council agenda throughout spring 1970.

Writing The Position Paper

By May 1970, the district's administrative

system was successfully unfrozen, and the council was seriously examining alternative directions for future change. The administrative council accepted the concept that the district needed to make itself accountable, but found it difficult to reach common accord as to the form accountability should take.

The importance of involving the total staff in the attempt to find a solution was clear. Unfortunately, this was more easily proposed than accomplished. Though some teachers were apathetic and others distrustful, the majority was willing to help in finding a solution. But the task was complicated by difference of opinion within the administration about the form that involvement should take. To some, involvement meant occasional consultations with a few key staff members; to others, it meant opening up the system for potential input from all those who cared to participate. There was general agreement that the administration needed to inform the staff of the survey results and of the future direction contemplated by the administration. The device chosen was a position paper. The council spent the summer of 1970 writing and rewriting this document. When the paper was released to the staff in September 1970, it represented the first tangible product of joint decisionmaking by the administrative council.

The position paper called for the school district and each staff member to openly accept the responsibility for ensuring and documenting student growth as a consequence of instruction. Furthermore, it formally introduced the concept of accountability to the staff and called for the use of behavioral objectives and appropriate evaluation tools. Finally, the position paper presented the staff with an expectancy table for anticipated student growth in reading, and called for the development of other such tables in all academic areas.

Staff Reactions to the Position Paper

The publication of the position paper generated more discussion and fear among the staff than had been anticipated. The lack of a statement of the relationship between the general goals in the position paper and the specific situation of the individual teacher caused great apprehension. Throughout the 1970-71 school year, numerous meetings were held between staff and administration to discuss its contents. These meetings were used by the superintendent to supply the staff with information about the emerging national accountability movement. Although these meetings were designed to be informative, they also gave the staff an opportunity to express its concern directly to administration. Both the staff and the administration needed experience in dealing with one another on substantive issues on a give-and-take basis.

By spring 1971, teachers were talking about accountability, behavioral objectives, and evaluation in less negative and, in many cases, positive terms. Behavioral objective workshops were held, and a committee of administrators and teachers worked on the development of a behavior-based, staff-evaluation instrument.

Preparing for Change

During summer 1971 the administrative council discussed the ways in which the school district might organize itself to deal with future change. The administrators participated in exercises designed to train them in the skills needed to bring about change in their respective school buildings. Each administrator was asked to prepare a statement of goals for the coming school year that he would work to achieve. These goals and their accompanying strategies for achievement were discussed with the superintendent and the board of education. Each administrator was to be held accountable for achieving mutually agreed upon objectives. Two goals common to all building administrators were the continued training of the staff in the use of behavioral objectives and the completion of the behavior-based instrument for staff-evaluation.

In fall 1971, a districtwide workshop was held to obtain the responses of teachers to questions about accountability. Teachers were divided into groups of 10 and asked to respond in writing to the questions. The responses were content analyzed, and a summary was made available to the entire staff. After the teachers had an opportunity to digest the summary, meetings were held at each school building between staff and administration. These meetings produced lively discussions about the

alternative directions the district could move in the future. The clear message from the staff was an insistence on being involved right from the start in any design for the future.

To this point, the overall strategy had accomplished its primary goal of creating awareness of a need for change among the administration and staff. It now remained to be seen whether people would take the next step, and become actively involved in the planning for change.

In January 1972, the district invited every administrator and staff member to join a districtwide task force, whose purpose was to establish the criteria by which the district would make itself accountable. On January 29, the task force held its first meeting. Sixty-two teachers, approximately 20 percent of the staff, attended. The staff was ready and willing to participate in meaningful problem solving.

Conclusions

Although accountability is yet just a concept and plan in the minds of East Syracuse-Minoa educators, several important effects are already evident: Teachers are becoming more humanistic and beginning to desire a deeper understanding of students. Student, faculty, administrator, and community aspirations have risen. Educational goals and objectives have been outlined 10 years in advance, and there is a widespread effort to upgrade the quality of teaching and learning.

The Hillsborough Public School PPBS Program

Hillsborough, California

In California there has been much interest in program planning and budgeting systems (PPBS) as a means of increasing efficiency and infusing accountability into school districts. The State department of education began exploring the feasibility of statewide adoption of PPBS in 1969-1970 when it awarded grants to five districts to develop alternate models. For one of the successful applicants, the district servicing Hillsborough, a suburban community on the San Francisco peninsula, the grant presented an opportunity to bring together many budding innovations.

Prior to receipt of its grant, Hillsborough Public School District was already feeling its way toward an accountability system. A trustee, well acquainted with advanced management concepts through his work as president of a large company, was attempting to find a means for relating budget planning to demonstrated student learning, or lack of learning in the classroom. The district administration was working with the school board, teachers, parents, and students to develop processes for goal setting. Teachers and principals were working together to individualize instruction; others in the school district were interested in curriculum reform, updating and upgrading content and methods. Programed planning and budgeting provided a vehicle for these diverse efforts to become mutually reinforcing and to move toward organized and productive goals. Yet most of the professional staff were not aware of the implications of the PPBS project. During the first 2½ years of the project, only a small group of teacher leaders was actively involved in the planning of the project; another small group observed with open minds. The majority of the teachers was generally unaware of the real operation of PPBS, thinking of it as an administrative system that was only marginally related to the instructional process.

Instead of attempting to gain commitment to and understanding of the total program planning and budgeting system, the board and administration "individualized" its approach to change by allowing each member of the staff to work on those aspects of the developing district program that he felt most comfortable with and most interested in. The commitment they asked for was that every staff member be involved in some way in improving the services offered to children and to the community, that their first concern be to provide excitement and apply "love" to the instructional process. Above all there was an effort to avoid the notion that PPBS and the instructional system it supported were mechanistic, insensitive, or inflexible.

Decentralization of Decisionmaking

Early in the project it was discovered that decisions which could best be made by the classroom teacher *should* be made by the classroom teacher. Likewise, decisions pertaining to the operation of the school should be made by the principal, and only those decisions dealing with overall policy should be made at the district level. Hillsborough has made a steady effort to decentralize decisionmaking, particularly in the budget. The principal of an elementary school in the Hillsborough district that enrolls approximately 350 students will have a discretionary budget in 1971-1972 of over $20,000, more than $62 per pupil. These funds can be expended as that principal and his staff see fit: for instructional aid, conferences, audiovisuals and other supplies, for study trips, supplementary books, etc. The only restriction is that priorities be set on the basis of school objectives and individual pupil's needs before expenditure decisions are made by the principal and faculty.

Setting Goals

While the district was already deeply involved in the process of setting goals and writing and teaching toward performance objectives, district members found their increased decisionmaking prerogatives to be a powerful stimulant. At best educational resources are scarce, and

nothing is so wasteful of dear resources as bad decisions. One must know where he is and where he wants to get, instructionally speaking, before he spends the few dollars he has.

The only restriction in the decisionmaking process was that principals and administrators work with teachers and the community. Thus a dialog was begun with parents and others in the community to set goals for both content and processes of education. During the first 3 years of the project, through 1971, committees composed of parents, students, community members and leaders, and professional personnel set goals in English, reading, mathematics, science, and foreign language. Studies on physical education, recreation, and music are in process. Several formats of operation have been used, but all included initial input from community groups. Sometimes separate groups of parents, students, secondary educators, district faculty, and community leaders met, contributing ideas which were considered by the district staff. District-level administrators work as "facilitators" with these groups, seeing to it that the groups' ideas and concerns are integrated with other work going on in the district and presented to the school board and other decisionmaking bodies.

Four guidelines have been developed through this experience: (1) every effort should be made to select participants on the committees who are representative, interested, verbal, intelligent, and who possess stature within the community; (2) topics must be clearly framed for the community group by administrators in order for decisions to be free flowing and purposeful; (3) summaries of group conclusions must be fed back to the members of the group to insure that they are accurate and correctly interpreted; and (4) those working with the group must be very careful to use good group techniques, avoiding overstructuring, biasing the group in certain directions, or inhibiting the development of what the group sees as important. It has been found that all comments and ideas can be accepted and discussed by the group if an atmosphere of trust is maintained.

One of the most positive byproducts of the goal-setting process is the close rapport established among the professional staff, parents, and community members. The professional staff has learned to listen carefully and to assimilate the expressed concerns of the community.

Individualizing Instruction

Though many of the staff do not see the direct relationship between the district efforts to individualize instruction and the PPBS system, PPBS is an integral and necessary part of the effort to provide education tailored to the needs of every student in the district. PPBS links planning and budgeting systems to the measured needs of students, but how can these needs be accurately measured and determined? Standardized tests are too general to provide guidance. Hillsborough teachers have even found it difficult to apply objectives available through sources like objectives exchanges to their own classroom situations. They have been forced by the realities of instruction and decisionmaking to write their own objectives and to devise tests, both pencil and paper as well as more complex behavioral tests. The process of pretesting is diagnostic. Each teacher knows from the beginning of the year that his students are, in fact, individuals having widely divergent needs. Posttesting provides the feedback teachers need to assess the content and method that they have offered through the year's curriculum on the basis of how well individual student needs are met. And so the grist for the PPBS mill also feeds the individualization of instruction process.

Evaluating the Hillsborough Experience

In Hillsborough accountability has become an attitude which is apparent at every level within the system. Parents and other community members have become more aware of the pressures and complications of educational practice; they understand better how they can support the school and they feel the responsibility to provide that support. Teachers feel accountable to parents, the school administration and governing board, and particularly their students. They are developing means of measuring problems and monitoring the progress of every student, and they participate

in the decisions which guide the program within their own classrooms. Decentralization of decisions has made the school principal even more accountable as he makes more important and far-reaching decisions about the educational program. His leadership is paramount; he must become competent in the diagnosis of student strengths and needs, the content and processes of curriculum, systems management, personnel management, and be sensitive to all the people with whom he works. District-level administrators become increasingly accountable to the community as the community becomes more knowledgable about needs and potentials of the school, and to the teachers and building administrators who ask for physical and psychological support. Administrators have learned when to exert vigorous leadership and when to defer it so that principals, teachers, and others can provide proper leadership at their levels.

Another important outcome of the program is that teachers are beginning to ask questions: Does PPBS help us in unit and lesson planning? Are the objectives written into the units compatible with the needs of our students and with the goals stated by the community? How can we bring students and parents into the planning in a meaningful way? Are we really communicating with the parents of students through our periodic conferences? Do the tests we offer sample student performance adequately? Does the maxim "If a child knows what is expected of him, his performance will be better" have validity? In other words, the system has stimulated teachers to become learners themselves.

Another important side effect of the process of program planning and budgeting has been an increased communication and understanding between staff members within and between schools. Goals and behavioral objectives become the subject of intense professional concern, and teachers realize that they must share goals with each other for the mutual benefit of their students' performances.

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